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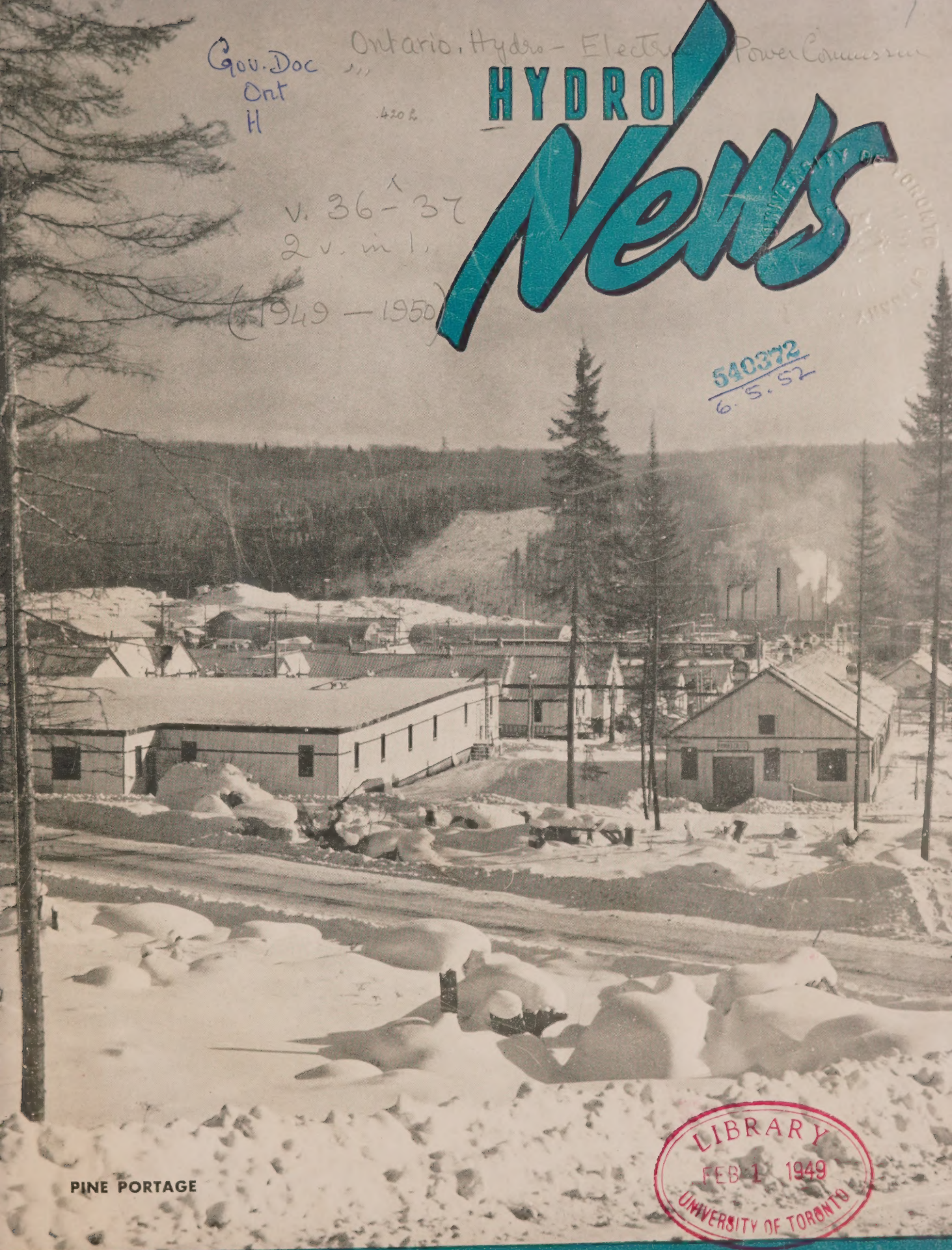
Ontario. Hydro-Electric Power Commission

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HYDRO News



PINE PORTAGE

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VOL. 36 JANUARY, 1949 NUMBER 1

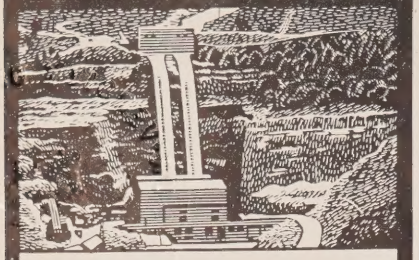
Hydro Expands in Ontario

10 NEW POWER PROJECTS DEVELOPING OVER 1,500,000 HP

Since 1945, Ontario has experienced a growth in demand for electrical energy without precedent in the history of the Province. To meet present and future needs, The Hydro-Electric Power Commission of Ontario is now speeding to completion the greatest construction program it has ever undertaken. Ten new plants will swell the power supply to industries, homes and farms by approximately 1,135,000 kilowatts (1,520,000 hp).

A frequency conversion program for a section of the Province is also under way so that ultimately 60 cycles will be the standard frequency throughout Ontario.

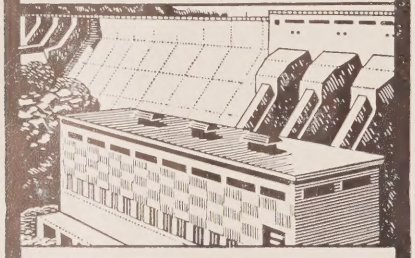
4 POSTWAR DEVELOPMENTS COMPLETED



1 DECEW FALLS (Extension)—Niagara District. 57,000 kilowatts (77,000 horsepower). Placed in service September, 1947



2 EAR FALLS (Extension)—English River, N. West. Ont. 5,500 kilowatts (7,500 horsepower). Placed in service June, 1948.



3 STEWARTVILLE—Madawaska River, East. Ont. 60,000 kilowatts (80,000 horsepower). Placed in service September, 1948.



4 AGUASABON—Aguasabon River., N. West. Ont. 40,000 kilowatts (53,000 horsepower) Placed in service October, 1948.

NEW POWER DEVELOPMENTS UNDER CONSTRUCTION

PINE PORTAGE—Nipigon River, N. West. Ont. Initial capacity, 60,000 kilowatts, (80,000 horsepower). Ultimate capacity, 120,000 kilowatts (160,000 horsepower). In service December, 1950.

CHENAUX—Ottawa River, East Ont 119,000 kilowatts (160,000 horsepower). First six units scheduled for service in 1951 Remaining two units in 1952

*DES JOACHIMS—Ottawa River, East. Ont. 358,000 kilowatts (480,000 horsepower). First four units scheduled for 1950, remaining four in 1951

WINDSOR STEAM PLANT—Windsor, Ont. 180,000 kilowatts (240,000 horsepower). Scheduled for completion in 1951

LA CAVE—Ottawa River, East. Ont. 153,000 kilowatts (204,000 horsepower). Scheduled for completion, 1952. Six initial units with provision for additional two

TUNNEL G.S.—Mississagi River, N. East. Ont. 42,000 kilowatts (56,500 horsepower). Scheduled for service early in 1950

*DES JOACHIMS DEVELOPMENT—
On completion this will be one of Hydro's largest plants, second only to the 500,000 horsepower Queenston-Chippawa Station.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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FRONT COVER

AT Pine Portage, on the turbulent Nipigon River, another Hydro development, which will have an ultimate capacity of 120,000 kilowatts (160,000 h.p.), is under construction. When the Commission's photographer, Ted Johnston, visited the site recently, he succeeded in recording many unusual camera impressions of the project. The photograph for this month's front cover illustration, showing the large construction camp in a shimmering blanket of snow, was taken during his visit. The back cover illustration, which tells a graphic story in itself, is another interesting result of this photographic safari.

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FEATURING DAM construction at Hydro's major power development at Des Joachims on the Ottawa River are the sluiceways built on the Ontario side to by-pass temporarily the entire flow of the river. The concrete piers, poured from the Bailey Bridge conveyor trestle, are approximately 20 feet wide and 125 feet high, with a 100-foot base.

HYDRO ON THE MARCH

IN crossing the threshold of a new year it is customary for organizations and individuals to look back upon the record of the year which has passed into history. For Hydro, the year 1948 was one of noteworthy achievement despite the problems which, at times, seemed to eclipse the magnitude of the accomplishments.

Power demands are recognized as a sensitive barometer of general conditions. In Ontario, these demands have been steadily pyramiding, reflecting the unprecedented expansion which has been taking place in practically every field of human enterprise. Today, the province is experiencing the greatest period of development and prosperity in history. Following the war years when materials and labour were marshalled almost entirely for the war effort and when only limited new construction could be undertaken, Hydro was hard pressed to meet the almost overnight transition to peace-time production and the tremendous industrial expansion of the past three years. The extent to which the power supply situation was aggravated by the prolonged dry period when lack of rainfall in the right places created a critical shortage of water required to operate power plants in Ontario and Quebec with a resultant critical shortage of power is now common knowledge.

While power supply conditions are better due to improved water conditions along with the very fine co-operation of both labour and industry in rearranging working schedules over six days and six nights of the week and to voluntary conservation and certain restrictions, there is still an acute shortage. Robert H. Saunders, the Commission Chairman, has warned all consumers that there can be no let-up in these efforts to save power as we are now in the critical period of the winter when any relaxing and adverse weather conditions could bring a return of power interruptions.

While co-operating in helping save electricity during the present serious but temporary shortage, however, consumers have cause for the greatest gratification when they note the pace at which Hydro's $400,000,000 post-war construction program is proceeding, what has been accomplished to date in providing new power resources and the fact that this program, when completed, will make available a total of 1,125,000 kilowatts or 1,500,000 horsepower. When the problems presented by shortages of labour and materials are taken into account, Hydro's record of achievement to date is all the more noteworthy. Last year alone, four new and important sources of power supply were made available and work is proceeding rapidly on the construction of six other power projects.

But that is not all. Last year saw the start of preliminary survey work in connection with the tremendous $200,000,000 frequency change-over program in the 25-cycle area of Southern Ontario. This long-term program will progressively make available to the consumers in this area the benefits of a 60-cycle frequency and result in Ontario, as a whole, having a standardized frequency which will be in line with frequencies on other parts of this continent.

There were other highly important undertakings which occupied the attention of the Commission in 1948. For example, between November 1, 1947 and December 31, 1948, 4,085 miles of new rural line were built to provide services for 31,651 new rural consumers. These extensions of rural service are in line with the Commission's policy of making power available to consumers throughout the province on an equitable basis according to their needs. It is recognized that a prosperous and progressive agricultural industry is essential to economic balance. At the present time, the farmers of Ontario must be prepared to meet not only the increasing demands of the domestic market but to contribute substantially to the needs of the people of Britain and in the war-devastated countries of Europe. Hydro service is vitally linked with modern and efficient farm operations and, at the same time, it is an important incentive to keep the farmer and his helpers on the land by bringing similar advantages to those enjoyed by city folk.

While these are but a few highlights of Hydro achievements, they serve to provide tangible and convincing evidence of the bold and vigorous way in which the Commission is meeting the challenge of present-day conditions. They may be accepted also in the light of heralding the time, in the not-too-distant future, when more power will be available to bring ever-increasing benefits to all who work, live and have their being in Ontario. Hydro is on the march.

ACTION ALONG THE Nip



by
Boyd L. Graham
Hydro News

ALONG the turbulent Nipigon River, in Ontario's rugged northland, another gigantic Hydro development is now in the making.

It is the Commission's new Pine Portage project which, when placed in full operation, will add another 120,000 kilowatts (160,000 hp) to the present resources of the Thunder Bay System.

Situated some 12 miles upstream from the well-known Cameron Falls plant, this new development is scheduled for initial operation in 1950. The initial installation includes two units which will generate a total of 60,000 kilowatts (80,000 hp). However, this capacity will be doubled at a later date by the addition of two more units. Estimated cost of building this plant and installing the first two units is $19,980,000.

New Road

Little more than a year ago, the site of the new project was practically virgin bushland. When Hydro's advance guard arrived on the scene in November, 1947, they had to start from "scratch." Supplies were brought in by barge from Cameron Falls, for the new road which the Commision later built through the bush to connect Pine Portage with the outside world, was then only a plan on paper. Completion of this 12-mile stretch of wide, gravel highway from Cameron Falls, early last year, has been a great boon to those engaged on the project. Moreover, it has facilitated the movement of supplies and heavy equipment into the project, for Pine Portage does not enjoy direct rail connections.

Since that first day in November, 1947, rapid strides have been made in the big job of harnessing a famous river. At this point on the Nipigon, approximately 73 miles northwest of Port Arthur and Fort William, Hydro has marshalled a force of almost 1,200 men. This number will be gradually augmented to approximately 1,500 during the next few months as construction activity reaches a peak.

Today, the visitor finds an encampment comprising over 50 buildings of various types, including several large and modern dormitories which provide comfortable living accommodation. Two large cafeterias, each seating 600, feature well-planned meals to satisfy the hearty appetites of the construction staff. Medical service is provided by a modern hospital which is staffed by a resident doctor, two nurses and other assistants. This building has a general ward and a private ward, as well as an operating room, emergency room and other auxiliary rooms.

No effort has been spared to make the leisure hours of the men as pleasant as possible. A large amusement centre includes six bowling alleys, a room with six billiard tables, a coffee shop, card room, in addition to a commissary, post office and music room. Another building does triple duty as a church, theatre and dance-hall. Those wishing to further their education can do so, for a branch of the Frontier College, with a competent teacher in charge, fulfills this important function.

From the top of the steep hill west of the site, several large Quonset huts which house the machine shops, storehouses, repair shops—even a blacksmith shop—are also visible. Nearby are situated the administrative buildings, where one meets some of the key personnel connected with the project. These include L. J. Gallagher, General Construction Superin-



Hydro News Records Impressions Of Construction Progress At Pine Portage Development

tendent and Donald A. Rankin, acting Resident Engineer.

Concentrated Activity

This high bluff, where families of the men in charge of the development live in neat, white homes, also commands an excellent, over-all view of the project. From this vantage point, the visitor can witness all the concentrated activity which attends a development of this magnitude. Here, you see not only the busy camp, with its huge assembly of buildings, but also the gaunt outlines of the conveyor system which will play a great role in the concreting operations.

During a recent tour of the Pine Portage site, Hydro News learned that the project would involve the pouring of 340,000 cubic yards of concrete, requiring nearly 2,000,000 bags of cement. This fact is not so amazing, though, when it is learned that the main dam itself will be 3,000 feet in length—well over a half a mile! The main dam will have an average height of 80 feet and a maximum height of 140 feet and will be 12 feet wide across the top.

Foundation For Dam

Although only a small amount of concrete has been poured for the dam as yet, the impressive proportions of this structure are now evident. A deep cleft has been gouged in the granite floor of the valley to form a solid foundation for the dam which will span the Nipigon, raising its level 105 feet to the level of Lake Nipigon, thus creating the head for power purposes. This will increase the area of the lake by approximately 14 square miles, thereby submerging Virgin Falls where Hydro built a control dam several years ago. Flooding of this area will necessitate clearing of some 6,500 acres of land between the new dam and Lake Nipigon which lies almost 15 miles due north of Pine Portage rapids.

This clearing project is now well advanced. Above the development, as far as the eye can see, all forest growth and saleable timber has been cleared from the wide valley which one day will contain the vast forebay at Pine Portage. It is anticipated that approximately 70,000 cords of pulpwood and saw-logs will be "harvested" by the time clearing is completed. The new Pine Portage dam will fulfil the same purpose as the Virgin Falls structure, which for many years has regulated the storage levels of Lake Nipigon as well as the flow of the Nipigon River.

Built of concrete, the gravity-type main dam at Pine Portage, buttressed at each end by the steep hills which now tower over Nipigon valley, will include a spillway consisting of six sluices. Four sluices

EXCAVATION AND formwork for the main dam at Pine Portage are shown in this photograph on the left while a special line built by the Commission to supply power to the project is depicted at right.





of the spillway, which will be located near the easterly end of the dam, will be controlled by stop logs and two by steel sluice gates. The spillway will have a total discharge capacity of 30,000 cubic feet per second. A concrete log chute, 700 feet long, will be built at the east side of the river. It is estimated that approximately 500,000 cords of pulpwood and saw logs are driven down the Nipigon every year.

The powerhouse—286 feet long—will be situated at the foot of the dam near the centre of the structure, with the transformer and switching areas located on the west bank of the tailrace channel. Water entering through the head gates in the dam, will be conveyed to the turbines by steel penstocks encased in solid concrete. The water will then be conveyed back to the natural river bed through the tailrace channel, excavated out of solid rock for a distance of 600 feet.

Rock excavation at Pine Portage has been one of the chief operations yet undertaken. Before this part of the program has been completed, approximately 475,000 cubic yards of rock and earth will have been removed as a necessary preliminary to actual construction.

Today, the brisk winter air still resounds with the clatter of pneumatic drills while giant diesel shovels bite out huge chunks of granite to prepare a solid foundation for the powerhouse. Similar operations are evident in the tailrace area where heavy



L. J. GALLAGHER, General Construction Superintendent, discusses an interesting point with his assistant, Cory Robbins.

trucks can be seen loading rock which is carried to the crushing plants and thence to the aggregate stockpiles by an overhead conveyor system.

Another extensive operation has been the excavation for the diversion channel near the west bank of the present river bed. This channel is 700 feet long and 50 feet wide. Within the next few months, a cofferdam will be thrown across the river and will then be passed through the diversion channel. This will permit construction of the main dam, over the present river bed, to be undertaken in the "dry."

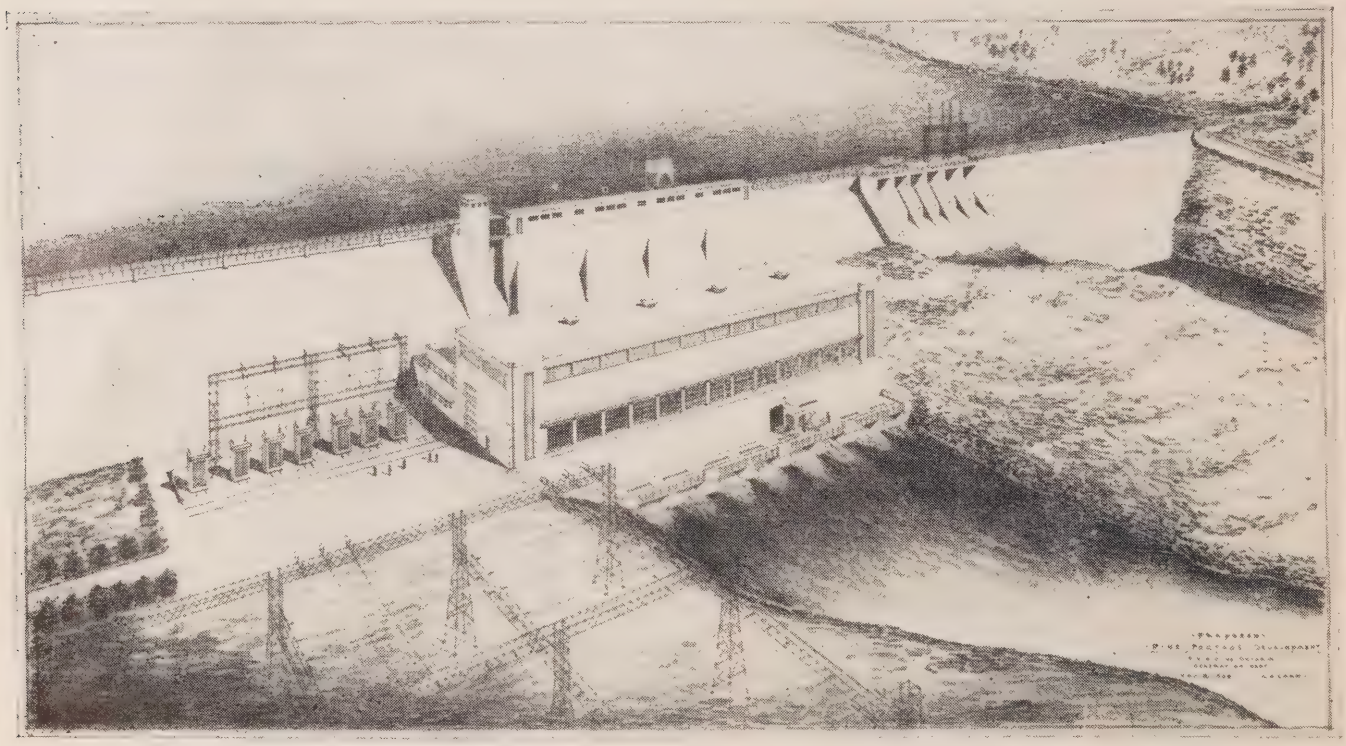
Before the diversion is carried out, however, a section of the main dam will be constructed across the dry diversion channel. Then the upstream end of the channel will be blasted away and the water diverted down the channel and through two portals in the concrete section, each 20 feet wide and 30 feet high.

Work on the portal section is now under way, while the sturdy cofferdam is slowly "inching" its way across the raging flood of the Nipigon.

And so, day after day, men and machines are moving forward with relentless purpose, in the mighty task of forging another link in Hydro's growing chain of developments across Ontario—a development which will supply power to the mines and pulp mills and the growing communities of Northwestern Ontario.

HAMILTON DANCE

Annual At-Home of the Hamilton Hydro-Electric System will be held at the Royal Connaught Hotel at 9 p.m. on Friday, February 18. Committee in charge of affairs are: William Vivian, Chairman; M. Brind, B. Logan, B. Jowett, P. Carey, S. Street, G. Smith and A. Craig.



SKETCH BY Hydro Architect Kenneth H. Candy, illustrates in minute detail, the impressive proportions of the Pine Portage development on the Nipigon River which will be placed in initial operation in 1950.

PORTRAYED ABOVE are some of the structures which will play an important role in the concreting operations at the Pine Portage project. Cement silos are shown on the left while crushing and screening plants are located on the right. Below, left, carpenters are shown working on the intricate framework of a draft tube while Acting Resident Engineer D. A. Rankin and Patrick Harnett review details of the development.





INVOLVING REMOVAL of vast quantities of rock and soil, a 700-foot diversion channel has been excavated near the west bank of the river. In the foreground (below), beneath a temporary shelter, workmen are engaged in building portals for one section of the main dam which will pass water through the diversion channel. Behind can be seen a section of the cribwork for the cofferdam now being built to divert water into this temporary channel.

Light on a Blackout

by
Edith B. Kent
Hydro News

What Happens When A Power Cut-off Takes Place?—Here Are Some Impressions Gathered By A Hydro News Writer.

Just what is a power cutoff?

In the mind of many a layman, those two words signify an occurrence vaguely connected with lack of water, or lack of equipment, he's not sure which, but in any case it's a nuisance.

If the layman is an industrialist, he realizes a little of its economic significance. He sees the effect of a temporary blackout on his own industry, and is reminded of the very vital role electricity is playing in the present-day industrial life of Ontario. He sees the reason behind blackouts, but he may not know how they operate. The writer didn't either, so she took steps to find out.

Reasons For Shortage

The story begins with the big generating plants at Queenston and in the Ottawa valley. The flow of water at Queenston, from the Niagara River, is more or less constant and dependable, but last fall the amount of available water at such plants at Chats Falls on the Ottawa river and Stewartville had been sadly depleted by lack of sufficient rainfall in the right places. Accordingly, at these places less power could be generated. The same condtions prevailed at the plants of the Gatineau and MacLaren-Quebec Power Companies in Quebec, which supply the Southern Ontario System with much of its electricity, and they were forced to make large cuts in their allotments to the Commission.

Taking the week of November 8 to 14 as an example of the water shortage at its worst, these two factors combined to create a deficit of almost 6 million kilowatt hours each working day. In other words, electricity users in the Southern Ontario System wanted to use over 6 million kilowatt hours a day more than they could get.

Voluntary conservation, though undertaken on a considerable scale, and restrictions were not enough. Obviously compulsory reduction, in the form of cutoffs, was the answer.

Municipalities and rural areas were put on quotas, with advice to keep within such quotas by every possible means. This was accomplished by various methods depending on local conditions.

Sounds simple, doesn't it? But there's a lot more to it than just pulling a switch.

First, the local municipal Hydro system ascertains if industries in the area wish to make special arrangements to keep within their quotas without the necessity of cutoffs. If so, and if an industry is not already on a direct feeder line, every effort is made to put it on one, or on a line with other industries which give similar undertakings.

Then the time, frequency and duration of blackouts must be decided by the municipality, or in the case of direct industrial and rural consumers, by the Power Co-ordinator in Toronto. Consumers are informed of these decisions by radio or newspapers or both. Industries served directly by Ontario Hydro are given their information by the Power Supervisors at the head office in Toronto.

Action At Substations

The actual switch-pulling is done at the municipal substations. In each of these stations, one finds a long panel with a double row of knobs or switches connected with the various feeder lines. Acting on instructions sent over telautograph from the control room at the municipal office, the substation operator, at the appointed time, goes down the line, pulling one after another of the switches

(Continued on page 10)



WITH ONE eye on the Queenston forebay level and the other on its power load, the Power Supervisor in Toronto sits ready at all times to play the one against the other with the maximum efficiency. In addition, he is in telephone contact with all generating plants in Southern Ontario and can, at a moment's notice, have their turbine gates opened or closed, according to the vagaries of the demand.



CULMINATING ACTION of a power cutoff takes place at the substation, where the operator pulls certain knobs or switches on his panel, thus opening switches and cutting off feeder lines. The heavenward glance is due to the fact that he is checking the meters above, to see if the result is satisfactory. A double-check is provided by his helper, holding the chart.

●

EFFECT OF the cutoff on the Queenston forebay left, below, can be noted almost immediately on the Power Supervisors' meter shown at right. Circular portion of the meter is a graph tracing the variations in water level in the forebay, which the Supervisors manage to keep fairly close to 539 feet above sea level. In order to do this, when demand is high they increase the load on other plants; when the peak falls off they shift most of the load back to Queenston.





LIGHT ON A BLACKOUT

(Continued from page 8)

that control the feeders which are to be cut off.

The operation takes only a few minutes, but is the culmination of many hours of ingenious planning and much careful thought.

At the end of the blackout, reverse instructions are sent out over the telautograph, a machine which automatically reproduces written messages sent from the municipal office, and the operator goes through the whole process again, this time closing switches.

Supervisors' Room

How a power cutoff affects the water levels in the Ottawa valley can best be ascertained by a visit to the Power Supervisors' room in the Ontario Hydro building in Toronto. There, facing a ceiling-high panel on which are numerous meters and charts, at least two men are constantly at work watching power loads and forebay levels. Their chief task is to maintain a steady load on the Queenston plant throughout the day and night, regardless of how the consumers' demand varies, and still make the most efficient use of the resources at the other Southern Ontario plants.

When the demand falls off, as during a cutoff, the Queenston load is reduced, and part of the loads at the smaller generating stations must be shifted to Queenston. This is done by cutting off certain generating units at these stations, according to instructions telephoned by the Power Supervisors.

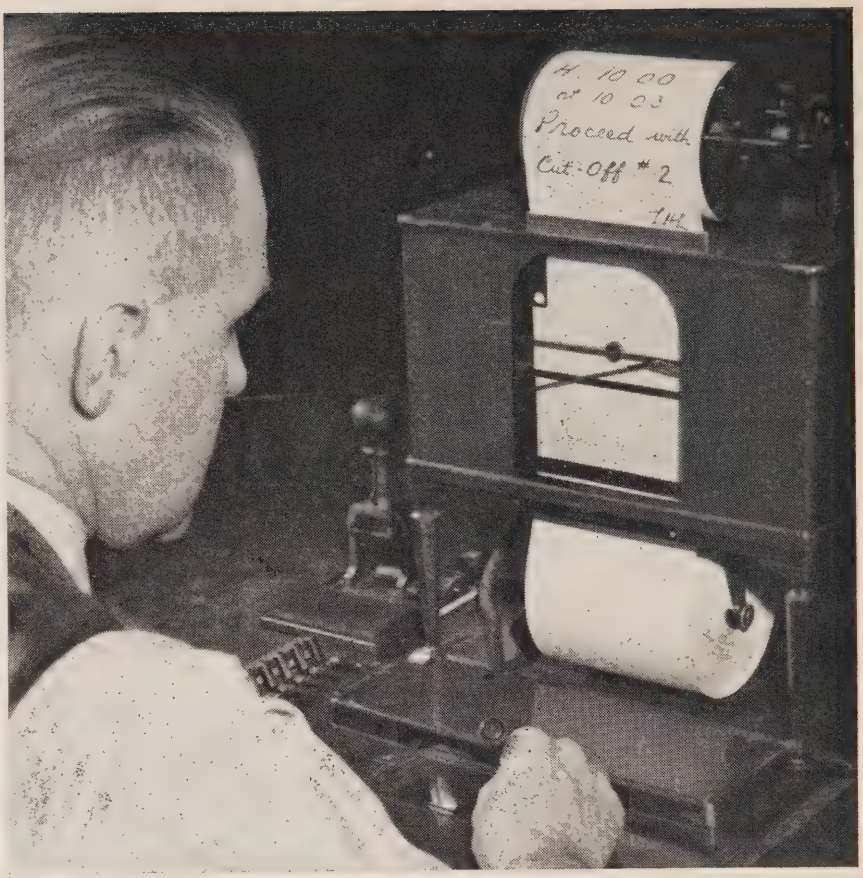
The cutting off of generators enables forebay levels to rise and the amount of reserve water at these plants to increase, in readiness for the next emergency drain on their resources. Thus, use of the available water supply is spread over the 24 hours of the day.

Tremendous Saving

As the blackout nears its close, more instructions are telephoned from the Supervisors' room, this time in reverse. The orders are to start up the generators, to be ready to cope with the increased demand when the power comes on again. Part of the Queenston load is shifted back to the smaller plants, and the situation reverts to its pre-cutoff status. During even that short time, however, a tremendous saving of water has been effected.

And so, these, in brief, are some of the impressions formed by Hydro News of what happens when a power cutoff takes place.

On-the-spot observations enable one to form a very keen appreciation of the necessity for the cutoffs during the recent critical period of the present power shortage when, through lack of sufficient rainfall in the right places, there was not enough water with which to generate all the power required to meet the demands.



VITAL PART of the process of engineering a power blackout is the set of instructions sent over telautograph from the municipal control room to the substation. Here, the operator has just dispatched a message which speaks for itself. When the operation is completed, the substation operator transmits a similar message reporting the successful carrying-out of his part of the undertaking.

PATTISON RE-ELECTED

J. R. Pattison, Chairman of the Fort William Hydro-Electric Commission, has again been elected to the local commission for a two-year term. Mr. Pattison has served on the local Hydro Commission for fifteen years. Previous to that he was on the Board of Education from 1921 to 1924, and on the City Council from 1914 to 1917, and again in 1928. He has also been a member of the Trades and Labor Council, having been President for twelve years.



J. R. Pattison

A popular figure in Fort William, Jack rates municipal affairs, particularly Hydro, among his first interests.

NAMED REGIONAL MANAGER

Recent appointment of Ernest George Gurnett as Regional Manager of the East Central Region has been announced by the Commission. Mr. Gurnett's appointment fills the vacancy left by the untimely death of Leonard G. Dandeno, and became effective January 1.

Mr. Gurnett, who has been with the Commission for over thirty years was born in Owen Sound, Ontario, where he received his primary and secondary schooling. Later he attended the University of Toronto and received his Bachelor of Applied Science degree. On joining the H.E.P.C. staff in 1916, Mr. Gurnett worked for a short time in the Sales Department and then as Assistant Engineer in the Municipal Department. On January 1st of last year he was appointed Consumer Service Engineer for the Eastern Region.

"Gurney," as he is popularly known to his many friends, is married and has two children, a boy and a girl. Golf tops the list of his hobbies, with photography and gardening running a close second.

This and That

NOW IT can be told . . . Vic Chambers of the Electrical Engineering Department, Station Section, was the gentleman who donned the Santa Claus toga and stepped before the Kleig lights while the camera recorded the Christmas cover for Hydro News.

And next, a fanfare of trumpets and we will anounce the winnah of our Santa Claus guessing contest. . . . (Fanfare sounded on silver trumpets). . . . It's a lady! . . . Helen M. Dunlop in Room 308. She gets the smokes for being the first Commission employee to recognize Vic behind the white face foliage. Congratulations, Helen. Ivan Widdifield may be interested to know that his entry, which also named Vic Chambers as Santa Claus, arrived just a few minutes after Helen Dunlop's entry had been received.

It may be a matter of interest also to record the fact that twelve entrants had correct answers. Among the other entries, some named Dick Butt as our Santa Claus; others were quite sure it was Tom McFadyen; a few thought it was P. G. Weir and one entrant thought it was A. McPherson who, undoubtedly, could have done a nice job!

* * *

WELL, NOW that we have crossed the threshold of another year, we had better get down to business as quickly as possible. After all, there are only about 280 shopping days until Christmas, and greeting card lads are already engaged in selecting the scenes and verses to be featured on the 1950 Christmas cards. On the subject of cards, a friend of ours, has already bought his supply for next Christmas. He showed us a couple of boxes he had picked up during the January sale. "Got 'em for half price," he winked. Incidentally he's a Scot!

* * *

AT THIS point, we would like to verbally shake hands with all our readers and say "Happy New Year." Pity we can't inject a few sound effects into this copy. We would have had bells sounding and a rousing rendition of "Auld Lang Syne." However, we've "tolled" you. (Looks as if we're getting away to a bad start in 1949. Nevertheless, that one did ring the bell!)

OVER THE Christmas season, it was our privilege to receive a number of very fine Christmas editions of publications which are issued by various industrial companies. On this subject, we would like to make a sincere acknowledgment to Canadian Line Materials Limited for the courtesy extended in permitting us to have a copy of the "collection of outstanding prose and poetry from the past 10 years of C.L.M. Christmas Books." This is one of the finest pieces of creative work we have seen in some time. The frontispiece of this handsomely colored and cleverly illustrated book is designed as a window on which there is snow and a beribboned evergreen decoration bearing the inscription "Merry Christmas . . . 1948." Through the "window" one can see a bedroom in which are two

by
The Editor

excited kiddies and their parents on Christmas morning.

Our congratulations go also to Malcolm C. Cline, Editor of The Harvester of International Harvester Company of Canada Limited, Hamilton, for a really outstanding Christmas issue. We recall with pleasure, too, the 1947 Christmas issue of The Harvester.

* * *

THERE WAS another item of more than passing interest on our desk recently. It was a poem. It had no title and the author's name was lacking. We liked it and decided that many of our readers would like it. Before using it, however, we checked up on the identity of the author and discovered that it had been written by a member of our staff . . . Edith Kent who, incidentally, is a sister of Allan Kent, one of The Telegram's top-ranking reporters. Edith had not written the piece for publication and asked us "Why must you use that?" We simply said "etaoin shrdlu" and she had to consent! Here it is:

Those letters that the printers use—
or misuse—as you will,
Are really very handy when you
have a blank to fill.

For instance, when you're cursing
and the missus glares at you,
You save your face and savoir faire
with "etaoin shrdlu."

Your boss is death on drinking, so
you tell of one big party
Where everyone was happy and was
eating very hearty;
One man got up to give a toast, to
you, and you, and you,
And everybody took a swig of
"etaoin shrdlu."

A bore you meet upon the street is
telling you a story
Of how he caught that ten-ton fish,
with humor old and hoary.
You realize you have to catch a
train at ten past two
So you sagely nod and pass him by
with "etaoin shrdlu."

The wedding was a nifty one, the
daily paper tells;
The church was full of orange blossoms, tall silk hats, and swells;
The bridesmaids, flower girl, and
page were charming in pale blue;
The bride wore white, of course;
the groom wore "etaoin shrdlu."

You're five days late on deadline
and your boss is breathing fire,
"Get busy on that story!" and your
blood pressure goes higher.
You simply aren't inspired; you
haven't got a clue,
So you toss the boss a paper saying
"etaoin shrdlu."

It means "I'm worked too hard,
sir," but he doesn't get the drift;
Of all your slaving, toil and weariness he makes short shrift.
In fact, you know you've had it
when he whispers low to you
"My girl, you're not a bad sort, but
—'etaoin shrdlu.'"

* * *

OUR SINCERE acknowledgments go to Dr. E. W. Bradwin, Principal of Frontier College, for his kind letter. We are indeed happy to know, Doctor, that you enjoy reading Hydro News. A letter such as yours is a great inspiration to all members of the Hydro News' staff.

Schooling In Hydro

by
Edith B. Kent
Hydro News

WHEN W. Allan Latimer, Chairman of the Alliston Public Utilities Commission came to the conclusion that many people had an entirely inadequate conception of Hydro and the vital part in everyday life, he did something about it.

What he did has resulted in the school children of Alliston and environs learning not only about Hydro and how it works but about safety measures that must be observed in relation to Hydro and the importance of power conservation at the present time.

Through the medium of the specially designed demonstration board, which was displayed at the C.N.E., the information was imparted in a vivid and interesting manner.

Having procured the demonstration board from Toronto, Mr. Latimer teamed up with L. M. Coutts, Area Manager, to deliver a series of addresses to Alliston's school children, numbering approximately 450. He chose children in preference to adults because, he says, they are "the men and women of tomorrow—those who will carry on where we leave off."

Having obtained the co-operation of the Alliston School Board, Gordon Lapp, Inspector of Public Schools, and the principals of the public and high schools, Mr. Latimer and Mr. Coutts set up their board in one of the classrooms, and gave their first demonstration on November 24th. The story of Hydro's inception and development was related to the students, and with the visual aid of the display board the course of electric power from the generating station to the ultimate consumer was followed. Mr. Coutts pointed out the reasons behind power conservation, and Mr. Latimer stressed the safety angle, illustrating some of his points with actual fuse boxes and switches. In subsequent sessions the film, "Niagara the Powerful," was also shown.

The lively discussion period following the talk indicated keen interest in the subject. Such interest was shown, in fact, that the two men felt justified in planning similar demonstrations for the benefit of children of the schools in the immediate vicinity of Alliston.

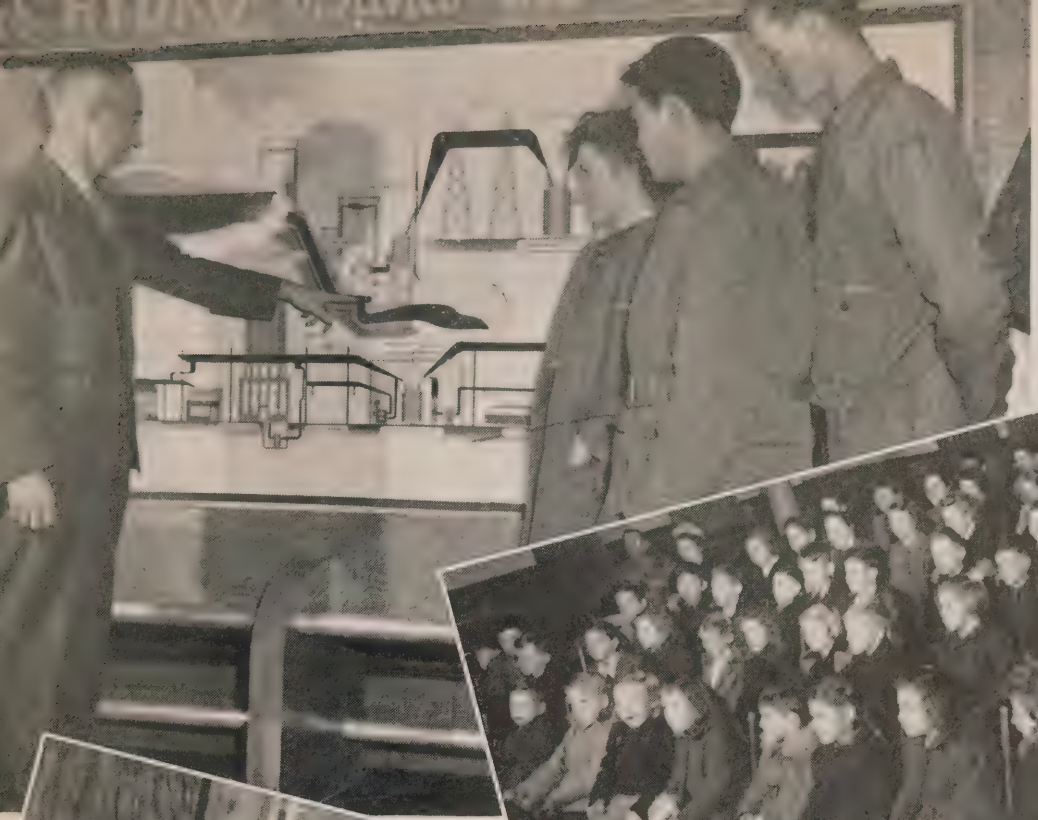
To this end, and with the approval of the High School Area Board whose members attended a special evening demonstration, arrangements were made to transport the children of the Public and High Schools by bus to the Sunday School Auditorium of St. John's United Church in Alliston, where permission had been obtained to hold the demonstrations.

At the time of writing, talks had been attended by pupils from Cookstown, Beeton and Tottenham, and plans were under way to include others from Colgan and four adjacent townships. By December 17, the close of the project, Mr. Latimer expected that approximately 1,200 persons would have seen and heard the demonstration.

One difficulty experienced by Mr. Latimer and Mr. Coutts was the fact that some of their audience consisted of children of all ages, from the earliest grades up to the senior year of high school. This necessitated a certain amount of "talking down" to the youngsters, as well as occasionally talking over their heads. However, both men seemed to overcome this handicap with the minimum of trouble, and to enable even the smallest kiddies to grasp the general nature of the subject. Both men agree that the project was a distinct success, and that it would be advantageous for other municipalities to adopt similar schemes.



HERE IS a new look as it applies to street lighting in Alliston. This picture shows a section of the main street where, by moving poles back from the curb, as shown by the arrow, and attaching wires to the sides of buildings, the sidewalk has been left clear. Planned by the Lighting Service Section of the H.E.P.C., this undertaking, which removes poles from busy locations and makes wires inconspicuous without impairing the efficiency of the lighting, was completed a few months ago, and has added immeasurably to the modern appearance of the street.



AN ESTIMATED 1,200 school children have learned about Hydro and how it works, through addresses given by W. Allan Latimer, Chairman of the Alliston Public Utilities Commission, and L. M. Coutts, Area Manager. At left, Mr. Coutts points out on the demonstration board a vital part of the generating equipment to three of the older students.



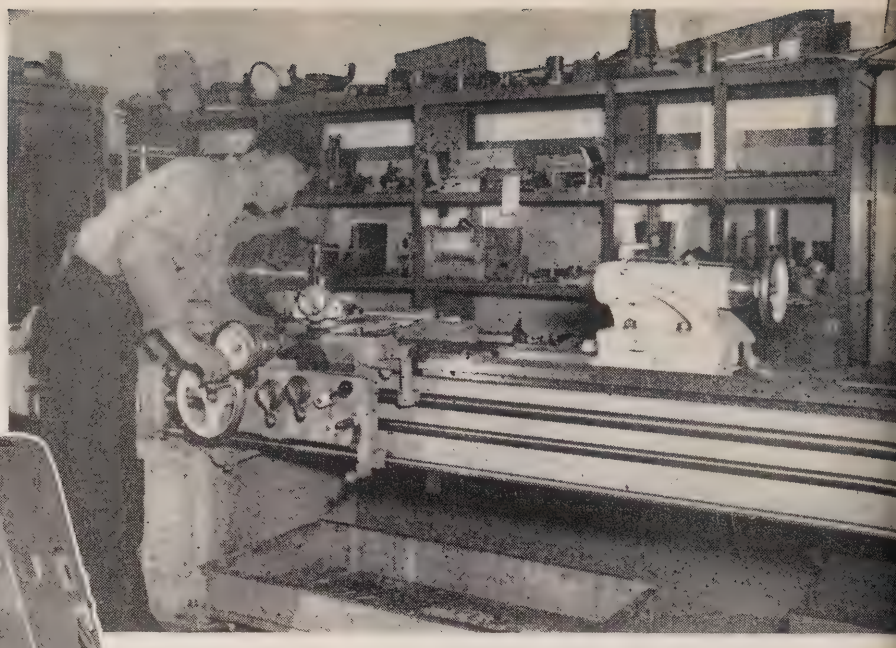


SHOWN ABOVE is a section of the group of children from Tottenham, paying rapt attention to the speaker. Other talks were attended by pupils from Cookstown, Beeton, Colgan, and four neighbouring townships, as well as Alliston where the idea originated.



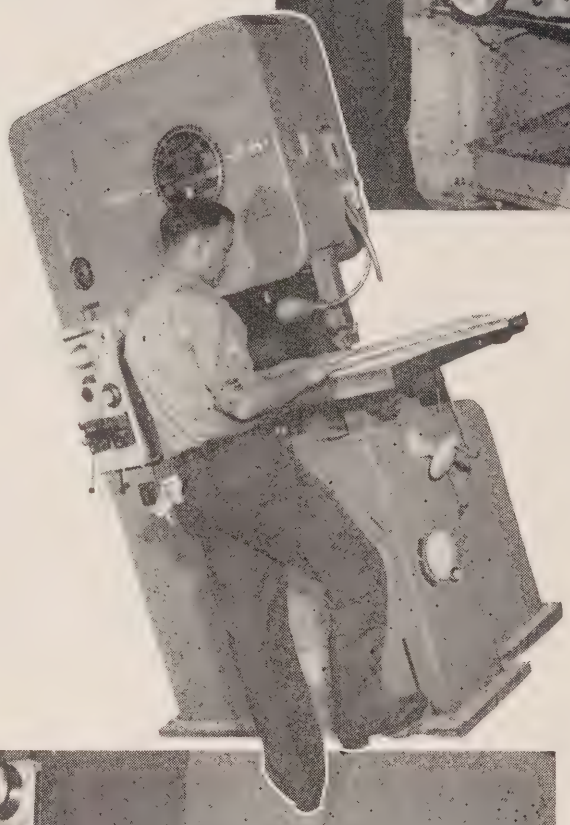
CHILDREN RANGED in age from kiddies just starting school to boys and girls of near-high-school years. Above, some of the younger tots are shown leaving the bus which brought them to Alliston. At right, older children indicate keen interest in the intricacies of the switch box, as explained by Mr. Latimer. The two men also outlined safety measures in connection with Hydro, and stressed the importance of power conservation at the present time.

Queenston's Highly Efficient Machine Shop Did Vital War-time Job—Is Today Making An Important Contribution To Maintenance Of Hydro Service

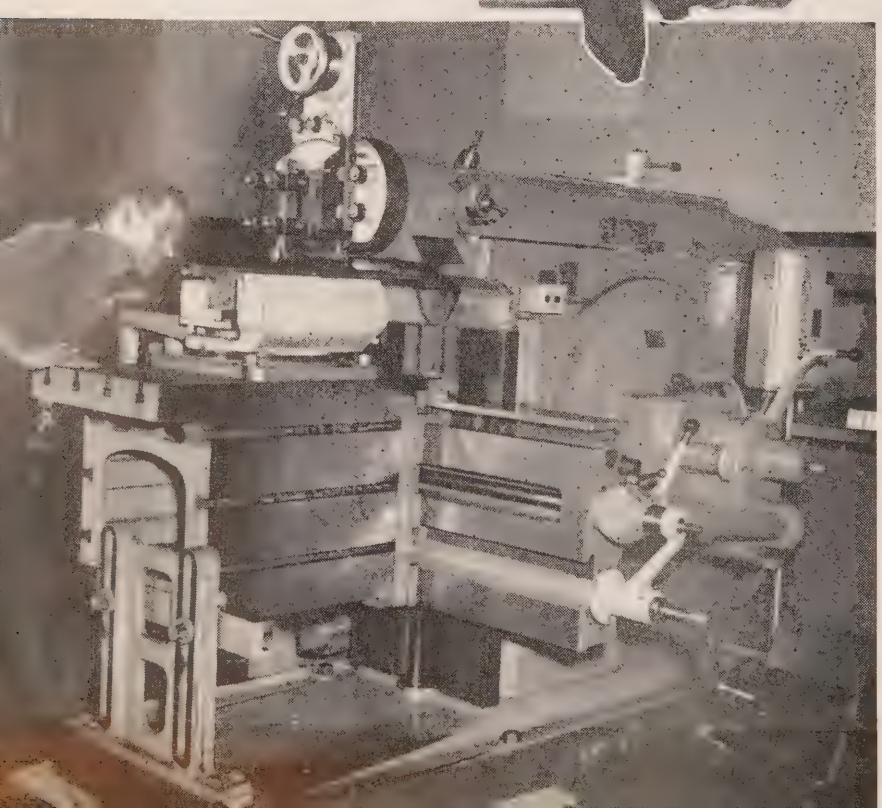


TOP RIGHT is a typical machine shop scene with Garnet "Monk" Morden in the act of turning some bushings on one of the modern lathes in the shop.

ONE OF the newest pieces of equipment in the Queenston shop is the Do-all machine portrayed in this picture. This unique apparatus is equipped to perform a variety of operations in connection with metal jobs. Harold Kent, operator of the machine, is shown cutting mica sheets.



AN INDISPENSABLE machine in any modern machine shop is the big shaper below. Here Clifford Morris, operator, is shown intently watching one of the exacting jobs which is in process of being machined.



Beehive of Industry

by

C. G. W. MacIntosh
Hydro News

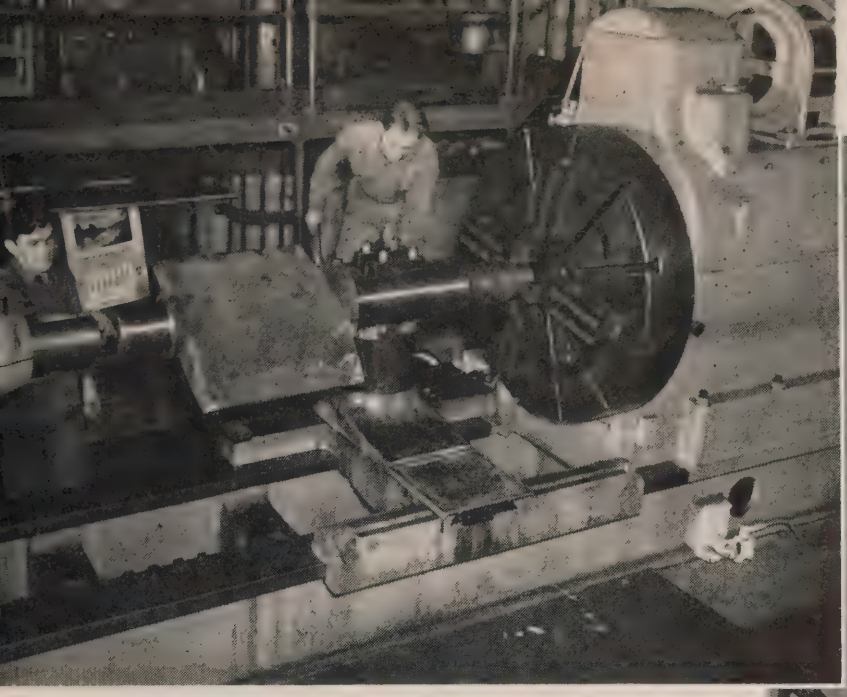
TUCKED way in a corner of Hydro's massive Queenston-Chippawa power plant is a virtual beehive of industry—a machine shop whose highly skilled personnel regularly undertake specialized work for the various Commission plants all across the province and on occasion also for a number of organizations in the Niagara region, that supply the Commission with equipment and materials.

This machine shop antedates the delivery of power from the Queenston plant because it was established in the powerhouse on October 10, 1921. (No. 1 unit commenced generating electric power nearly three months later—in January, 1922.) During its 27 years of operation, in addition to serving the Commission, it made an outstanding contribution to Canada's war effort.

During the war years, only a few people knew of the highly important work which was being done in the Queenston plant's machine shop.

Shop Foreman Ewart recalled, for example, that crankshafts had been made for corvettes and other vessels. In the war years, they had been engaged also on work associated with the production of small tank gun mounts, radar masts and bases, quadrant block liners and 5-foot diameter low pressure cylinders for

(Continued on page 19)



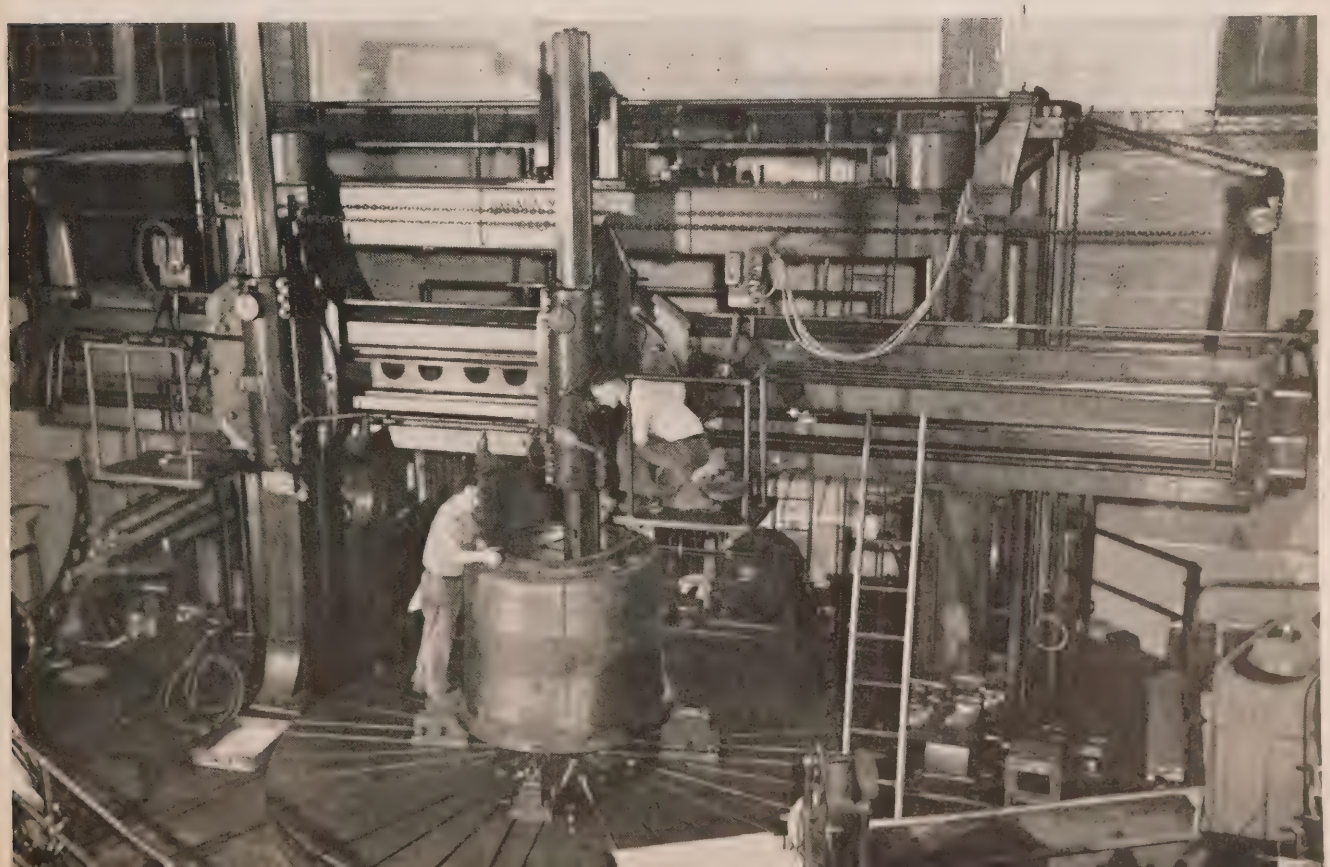
A RUSH job was in progress on the planer below when this picture was taken. Harold Worrall is shown here working on a butterfly valve spindle from the No. 2 weir at the DeCew plant.

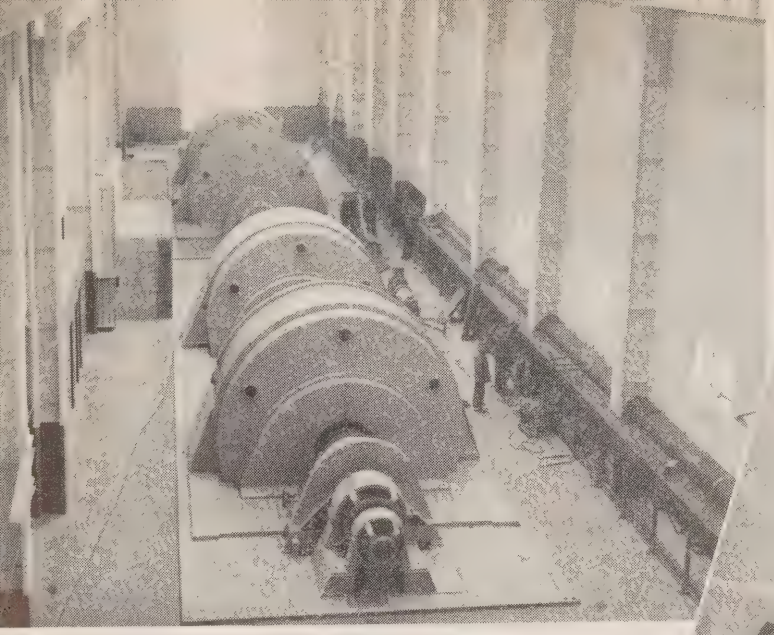


ONE OF the routine jobs was being done on the giant lathe above when the Hydro News' photographer got this picture. The two machinists turning the turbine gate are Doug. Hetherington, left, and Graydon Leigh, right.

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THIS GIANT boring mill, shown below in the Queenston machine shop, is reported to be the largest of its kind in the entire Niagara peninsula. It has a 14-foot table and is designed to handle work on turbine runners and other big jobs for various Commission plants. Shown here are the machinist operator Bruno Becevel, left, and his helper, Jack Walker, right.





LOOKING DOWN on the two 25,000 kv.-a. frequency changer sets at Hydro's Scarborough station. These, together with the installations at Chats Falls, Westminster and Hanover, provide the means for the interchange of power loads between the 25-cycle and 60-cycle divisions of the Commission's Southern Ontario System.



OPERATING LIKE a locomotive's driving rod, this hydraulic piston turns the heavy stator of one of the big changer units, adjusting loads between sets. Jim Seely is attending at a try-out.

"Ins" and "Outs" of a

FREQUENCY CHANGER

by Harry M. Blake, Hydro News

IN the development of its power system, Hydro has found it necessary to provide additional facilities for the interchange of power between 25-cycle and 60-cycle generating areas. Until quite recently only two channels were available to provide such service. These were the frequency changer sets installed at the Chats Falls plant on the Ottawa River and at the Hanover station in Grey County. Now, however, two new stations are in operation in Southern Ontario, one at Scarborough, near Toronto, and the other at Westminster in the London district. Still another, designed to serve the North, is under construction in the vicinity of Sudbury. When installations are completed, Hydro will be in position to convert loads approximating 200,000 kilowatts (267,000 hp) from 60-cycle to 25-cycle frequency, or vice versa.

The importance of these new stations is stressed not only by the tremendously increased demand for power but also by the Commission's frequency standardization program now in its initial stages of evolution. In this connection, it is pointed out that, while frequency changers are not, in themselves, a source of power they provide the means of meeting deficiencies of power supply in one division with surplus power from another. As the changeover from 25-cycle to 60-cycle frequency is progressively carried out in Hydro's Niagara division, consumers going over to 60-cycle power will not have to depend entirely upon 60-cycle generation. They will continue to be served to a very considerable extene with power from Hydro's Niagara plants, since the 25-cycle power generated there can be converted to their service through the new installations at Scarborough and Westminster. Moreover, when the major part of the generating equipment at Niagara is itself changed over to 60 cycles, industries which still find it more advantageous to use 25-cycle power can be accommodated through the same frequency changer facilities.

How Do Changers Work?

Very good, Hydro News readers will say. *That is what the frequency changers set up by the Commission will do. We take your word for it. But we would like to know how they will do it. What is this machinery like, and how does it operate?* Well, Hydro News has anticipated your curiosity.

You all know what happens when you go to a doctor. He gives you a prescription in pharmaceutical Latin. Something analogous happened the other day when we dropped in on one of the Commission's planning engineers.

"Frequency changers? That's easy."

He rapidly sketched out a diagram on a sheet of scribbling paper and handed it over.

"There you are. That explains everything—how they are set up, how they fit into the system and how they work. . . . Get me Des Joachims, please, operator."

We struggled with the diagram for a while. Suddenly we came to a decision. If we went back to the engineer with further questions, we would lose face. So we would sneak out with a photographer to Scarborough where two of the new 25,000 kv-a. changer sets are installed and endeavour to piece out the puzzle for ourselves.

A Strategic Approach

Much to our surprise, we found the engineer seated beside the photographer in the car assigned for the trip. He had to check up on a few things out at Scarborough, he explained. His car was parked downtown and it was snowing. He had heard we were going out, so he had decided to come along with us.

Rarely have we greeted anyone so heartily. Now, if we exercised our wits,

we should be able to gather all the information we required for the enlightenment of Hydro News readers without risking any deflation of ego.

"We're going to take some photographs to supplement your excellent and instructive diagram," we informed our passenger.

"That's an idea," he said. "By the way, there are a few special features about the Scarborough equipment. Have you got the diagram with you?"

We felt in all our pockets. We lied hardily. We must have forgotten to bring it with us.

"I don't know anything about frequency-changer sets," chimed in the photographer, who sometimes can be really helpful. "I always like to get the idea of the picture in my mind before I shoot."

We were now in heavy traffic, making sudden stops and starts. It was impossible for the engineer, with any fidelity to curve and line, to sketch out another diagram. So he had to talk.

How Frequency Is Changed

"Well," he said, "a frequency changer is fundamentally a motor generator. As such, it can only receive power at the motor end and deliver the same amount of power, less the losses in the set, at the other end. The special feature about it is that either end of the set can be used as a motor or a generator."

He leaned back to light a cigar while we waited impatiently for further elucidation.

"All of the frequency changer sets owned by the Commission," he resumed, "are of the synchronous-synchronous type. The motor is a synchronous motor of the frequency of the division to which it is connected and the generator is a synchronous generator of the frequency of the division to which *it* is connected. Consequently, the interchange of power can be in either direction through the set, the flow being in one direction at any particular time, but subject to change in direction instantly by the operation of the proper external or internal controls."

He went on to explain that the two units of a frequency changer set are connected by a steel shaft. Electric power is introduced at the end of the set which is being used as a motor. The motor turns the shaft, which in its revolution, converts the electrical power into mechanical power. At the other end the generator picks up this mechanical power and reconverts it into electricity.

We summed up, as if for the benefit of the photographer.

"The power comes into the motor at 25 cycles and goes out from the generator at 60 cycles. Or, with the functions of the units reversed, the power comes in to the motor at 60 cycles and goes out from the generator at 25 cycles."

"That's right," confirmed our engineer. "But I think you must have gathered at once from my diagram that frequency changer sets, in common with all other generating installations, are essentially low voltage equipment—that is, compared with the voltage at which power is usually transmitted. Consequently, to permit interconnection with the power systems, it is necessary to take the input and output of the set through transformers. High voltage and low voltage switching are also necessary for the proper control of the units."

We had left the main highway and were now approaching Hydro's Scarborough station. Our engineer pointed out a power line ahead.

"That's the 115,000-volt circuit originating at our Leaside Terminal. The line ends in 115,000-volt switching before passing through the 25-cycle transformer which reduces the voltage to 13,800 volts."

"Power, then, is being led in at 25 cycle frequency and will go out at 60 cycle frequency?"

"Right. The power is going out to our Barrie and Oshawa transformer stations. We've got to look after the increasing power requirements of our consumers in Georgian Bay and Eastern Ontario divisions. Services to all areas on an equitable basis according to their needs, even when we're a bit short of power. That's the Hydro policy, you know. . . . But here we are."

Impressive Installations

We were soon in the lofty room where the two frequency changers are installed. Following the usual practice, the units of each set are mounted in line on a common bed plate and the rotors connected together by a horizontal shaft. The shafts of these Scarborough changers are 23 inches in diameter. For sets of greater capacity, such as the one at Chats Falls, they are of even larger dimension, since the entire power load must be transmitted through them from one end of the set to the other.

Each of the Scarborough sets weighs approximately 500 tons and has an overall length of 63 feet 11 inches. Above the massive concrete foundations, the rounded humps of the steel-encased motor-generator units rise to a height of 12 feet 6 inches. Looking down upon them from the 140-ton travelling crane, which was employed in their installation and now performs general "valet" services, they have a deceptive air of somnolence since all sparkle and movement is hidden by the casings. All movement, that is, except the rapid rotation of the steel shafts which are revolving at the rate of 300 revolutions per minute—more than half as fast again as the shaft and rotor of one of the Commission's Queenston generating units. Catch *that* if you can at a distance of 100 feet. We couldn't

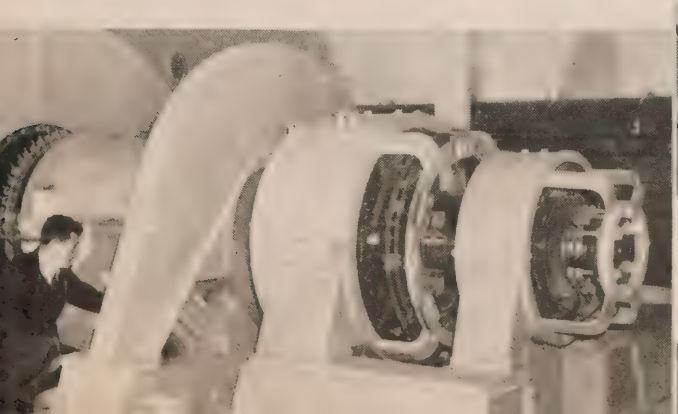
Automatic Starting

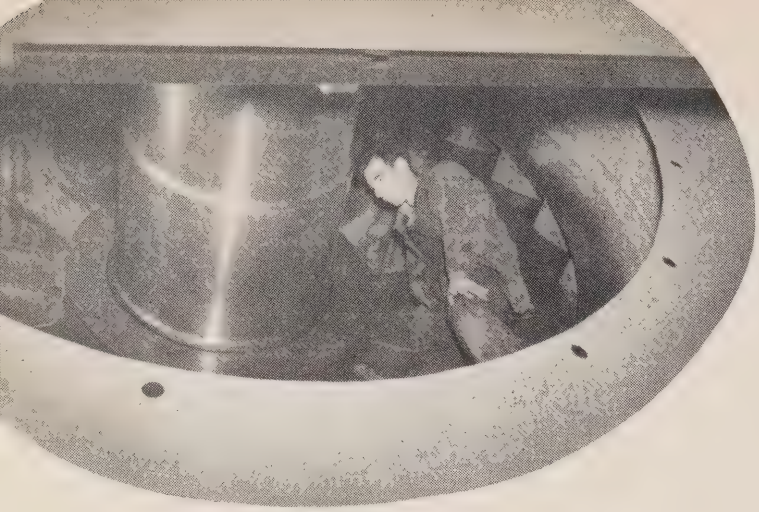
We descended from our airy perch for a closer view of the changer set from

RIGHT, INSTALLING the cables and supporting pans for No. 2 changer set at Scarborough. Left to right, Foreman N. McLean, D. Pierse, W. Anderson and R. Pidgeon.

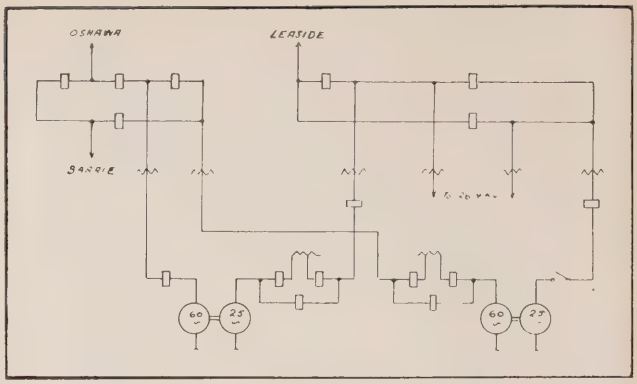


FIVE-HUNDRED-TON frequency changer sets, operating at 300 r.p.m., can be brought to a standstill in four minutes by means of an electric brake at each end of the shaft. Bruce Gilbert, Maintenance Superintendent, is examining the brake shoes for over-heating.





FROM DOWN-UNDER, the photographer got this unusual view of the shaft of No. 2 changer set as it enters the spider of the 60-cycle unit. Reg. Bennett is checking up before the set goes into action.



ARRANGEMENTS FOR the interchange of power at Scarborough are shown here. The 25-cycle power is brought in from Leaside on a 115,000 volt circuit, and is then reduced to 13,800 volts. The load passes from the 25-cycle motors of the frequency changers to the 60-cycle generators. The converted power goes through transformers which step it up again to 115,000 volts for transmission to Barrie and Oshawa. Similarly, 60-cycle power can be converted to 25-cycle frequency and transmitted to 25-cycle areas.

which 60-cycle power was passing out to Oshawa and Barrie.

"How do you start these machines?" we asked our engineer. "You didn't show that in your diagram."

"Didn't I?" he smiled enigmatically. "I thought that the position of certain markings I made on the diagram would have been a clear indication of the presence of an auto transformer and that this would have given you your cue. By means of this auto transformer the voltage is reduced to about 40 per cent of normal. The lower voltage is applied to the 25-cycle unit of this set to start it in a similar manner to starting an induction motor. When a speed of 300 revolutions per minute is attained, 100 per cent voltage is applied and the set can by synchronized. Sixty-cycle power then leaves the 60-cycle end of the set at 13,800 volts, is stepped up through transformers to 115,000 volts and delivered to a bus connected through circuit breakers to lines terminating at Oshawa and Barrie respectively. The other set is equipped for starting from the 60-cycle end. By this arrangement, following an interruption, one or other of the sets can be started immediately although only one of the two sources of frequency may be available. Does that answer your question?"

A Powerful Electric Brake

"You said there were some special features about these Scarborough units," we ventured.

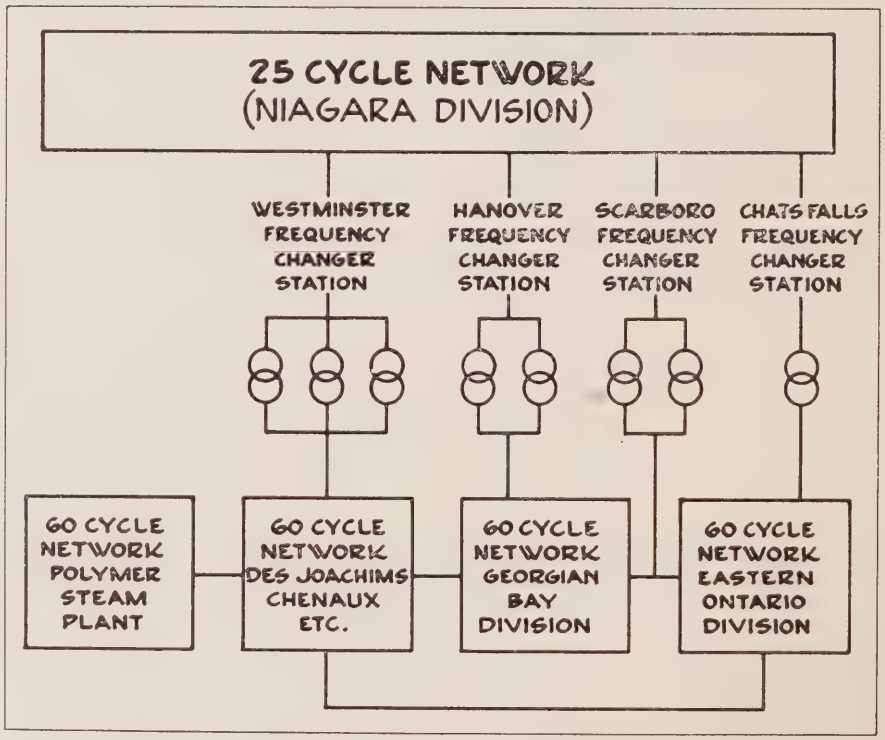
"Oh, yes. I didn't show *those* on the diagram. The sets installed here can be brought to a standstill in four minutes by means of an electric brake. This is essentially a steel disc on the frequency changer shaft. It weighs 2,900 pounds and rotates in an electric field, when bringing the unit to a stop, thus generating electric currents in itself and consuming power. This power, by the way, is dissipated as heat in the disc and raises its temperature to a noticeable extent. The weight of the rotating parts so swiftly brought to rest by this brake is 200 tons. . . . Then there is another rather novel device employed here."

Controlling The Loads

He pondered a moment before continuing.

"When synchronous-synchronous frequency changer sets operate in parallel—that is, when as here, two power systems are connected together through more than one set, some means must be devised for controlling the division of loads between sets. This control is effected through a shifting of voltage, which is brought about by a shifting of the stator of at least one of the generator units in its axis. So it is that the stator of one of the units here, instead of being bolted solidly to the bedplate as in the case of an ordinary generator, is mounted on a cradle so that it can be mechanically shifted on its axis through a small angle.

(Continued on page 22)



THIS SKETCH shows diagrammatically how power loads will be interchanged between 25-cycle and 60-cycle networks by means of strategically located frequency changer stations.

BEEHIVE OF INDUSTRY

(Continued from page 14)

steam engines and armor piercing shells.

Located in the southwest section of the power plant, between the fourth and fifth floors, the machine shop has spread beyond its original confines and now occupies a part of the extreme lower end of the generating room, originally built as an erection bay. It is equipped with two of the largest machines to be found in any plant in the Niagara district—a vertical boring mill with a 14-foot table and 16-foot diameter swing and a giant 61-inch lathe.

In addition, there are three brightly polished shapers, varying in size, and having 14-inch, 20-inch and 36-inch strokes; nine lathes from 14-inch to 61-inch diameter swing; a ten-foot planer; a Do-All machine for sawing and filing metal; a universal grinder; a surface grinder; a radial drill, a milling machine, two tool grinders, five drill presses, modern welding machines and other equipment.

At the close of the war, this neat and highly efficient shop resumed its regular peace-time role and today the work which is being done by its staff of skilled craftsmen represents an important contribution to maintenance of Hydro service throughout Ontario.

The two men who direct the activities, James "Jimmy" Weir, master mechanic, and Dave Ewart, shop foreman, are proud of the service the shop is rendering.

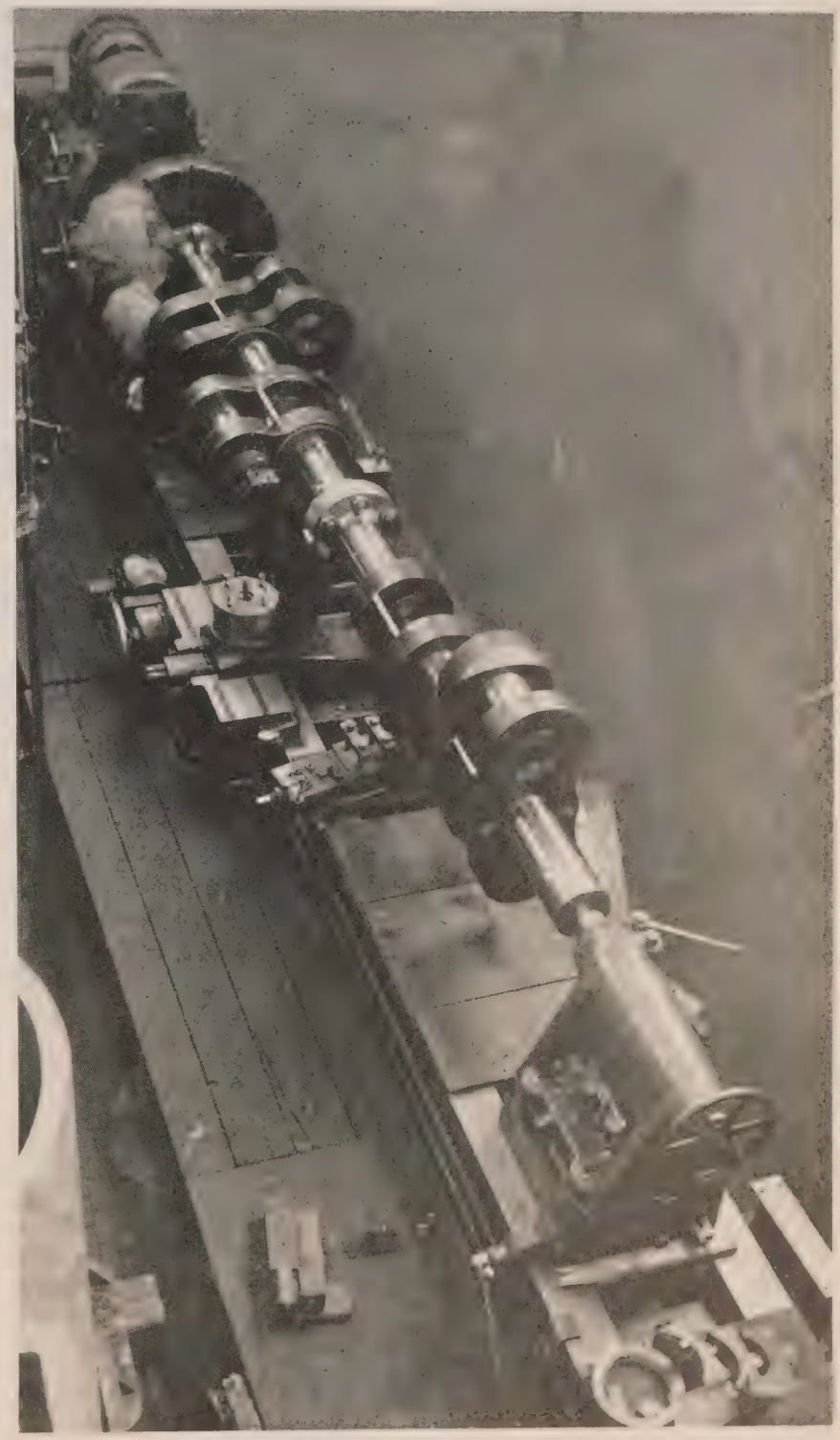
Many jobs which cannot be handled in the Commission's other plants due to the lack of a giant boring mill and a giant lathe are sent to Queenston. For example thrust bearings from Abitibi Canyon, Francis runners from Barrett Chute, turbine shafts from Coniston, turbine bearings from Cameron Falls, and many other jobs are handled at Queenston.

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VOLCANIC POWER

Found!—A use for volcanoes. An ingenious method of obtaining electricity is proving very successful in Milan, Italy, according to reports. By tapping underground water, near red-hot lava beds, engineers found they could obtain high-pressure steam to operate turbine electric generators. An order has been given for two 300-horsepower mud pump motors and one 250-horsepower draw-works motor for use on the drilling rings. Engineers estimate that the pressure of the hot water underground is great enough to support a one-inch column a mile high. Owing to reduction in pressure at the surface, this water will turn to steam, which will be piped into the turbines.

GIANT LATHE AT QUEENSTON



MANY IMPORTANT war jobs for the Canadian government were handled at the machine shop of the Queenston-Chippawa power plant during the last war. In this picture, taken during the war years by Charles Stuckey, a crankshaft for a corvette is being "turned" on the giant lathe whose normal width is 57 inches but which can be expanded to 61 inches, according to the work being done.

Manager George Austen Retires From Electric Service League

by
John A. Murphy
Hydro News.

ON December 31, 1948, George Austen, "Mr. Red Seal" himself, officially retired as Manager of the Electric Service League of Ontario.

From the inception of the League, 25 years ago, its activities have revolved very largely round one man—Mr. Austen. Today the Red Seal is a recognized symbol throughout Ontario as well as in many parts of the United States. It was to get the story of that phenomenal expansion, in addition to some pertinent facts on Mr. Austen's colorful career, that Hydro News recently visited the offices of the League where we trapped the gentleman concerned in the act of cleaning out his desk. Having thus unwittingly obtained a psychological advantage, without further ado we whipped out pencil and paper and duly recorded what follows:

At the tender age of 17, George Austen joined the staff of the Hamilton Spectator as a very junior member of the reportorial staff—or a "cub" as they say in Hollywood. He served the usual apprenticeship, being first placed on "the death beat." This ominous assignment consisted in keeping a regular check on the mortality rate among prominent Hamiltonians by making calls at the city morgue and the more successful members of the undertaking profession about the town. From such lugubrious chores George progressed up the journalistic ladder with a rapidity that was nothing short of meteoric. In the scant space of four months he attained a pinnacle that is denied to many a newspaperman three times his age. But perhaps he should describe the event himself:

"Since the first day I joined the paper," reminisced Mr. Austen, "I had been possessed with the burning desire to write an editorial. At the end of four months I felt the time was ripe so I wrote an editorial and submitted it to the editor. Much to the amazement of everyone he printed it."

There you have George Austen, 17 years old, four months on a newspaper and he writes an editorial—and gets it printed! With such a beginning it will occasion no surprise to learn that he once gave his city editor a black eye—enough in itself to endear him to any reporter—and still kept his job. Four years later at the hoary old age of 21 he found himself in Kingston, Ontario, with the grandiloquent title of Managing Editor of the Kingston Standard. From there he moved to editor's desk of the Portage la Prairie Review in Manitoba before returning to his native province, and assuming the duties of editor on the Peterboro Review. Next stop was a position as editorial writer on the Toronto Mail and Empire, last port of call before going forth to preach the gospel of adequate wiring on the highways and byways of Ontario.



IT APPEARS that the renowned "Life of Reilly" will soon be changed to the life of Austen. Here we see George reclining on the easy chair presented to him by his confreres in the Electric Service League of Ontario. Other symbols of esteem received by George upon his retirement from the position of Manager of the League included the handsome travelling bag and the equally attractive picture on the left. The envious quartet in the background consists of Asa Stewart, Toronto Hydro; Bob Creighton, Northern Electric; James A. Blay, Manager of Promotion, H.E.P.C. and President of the League; and E. M. Ashworth, Manager of the Toronto Hydro-Electric System.

Mr. Austen officially identified himself with the Electric Service League on July 1, 1923. At that time the organization consisted of eight companies whose total subscription was $2,000, and this sum was to be matched by the Toronto Hydro-Electric System. The problem, as George phrased it was to "crack the awful nut of adequate wiring in houses built by speculative builders." A start had been made in 1922 when two model homes had been exhibited under the auspices of a group of electrical leaders for the purpose of demonstrating approved electric home standards. The following year it was proposed that a

permanent League be formed with a full-time staff. Thus did George Austen appear on the scene.

After preliminary discussions among the sponsoring companies an approved standard of wiring for homes was agreed upon. As a symbol it was decided to use a ten-point red seal as the League's stamp of approval. Next step, as it usually is, was the procuring of funds. So Mr. Austen went out and sought subscribers. That he was successful was borne out by the fact that the Company membership jumped from 8 to 65 in a record space of time. In the spring of 1924 the staff was doubled by the acquisition of Alex McTavish, the redoubtable "Sandy" himself, from the Toronto Hydro.

In the beginning the League concentrated its efforts in the area of greater Torono. After a modest start, 600 homes in 1924, it gained momentum rapidly so that by 1930 the rate had jumped to an average of 3,500 Red Seal homes a year. The curve continued to rise to the point where between 80 and 90 per cent of all homes under construction in the Toronto district were wired according to Red Seal standards—bringing an estimated $15,000,000 worth of business to the electrical industry.

Nor was the fame of Red Seal confined only to Toronto. Within two years of the formation of the Electric Service League in Toronto, an American organization acquired the United States rights to the Red Seal. When this group subsequently became a victim of the depression, another organization came into being under the title of the National Adequate Wiring Bureau. Thus though a new symbol was adopted, the principles and purpose of the Red Seal plan were continued.

Growing Interest

The war years with their shortages of materials and halting of construction necessarily limited the activities of the League in the field of new construction. However, interest was maintained by preaching the doctrine of adequate wiring at every opportunity. The interest of other communities about Ontario was aroused and plans were formulated to extend the Red Seal field activity beyond the Toronto area. In 1946 these plans reached fruition, when, with the support of the O.M.E.A. and the A.M.E.U. and the aproval of The Hydro-Electric Power Commission of Ontario, the League officially became the Electric Service League of Ontario. The co-operation of builders and electrical contractors throughout the province was most encouraging and Red Seal houses are becoming a familiar sight in the growing residential sections of busy Ontario municipalities.



GEORGE AUSTEN whipped off his glasses and smiled when he saw the Hydro News' photographer in front of his desk in the office of the Electric Service League of Ontario. The former Manager of the League didn't mention his brand of toothpaste.

In conjunction with the expansion of the League, 14 schools were conducted around the province for the purpose of demonstrating adequate wiring standards to municipal represenatives.

So it can readily be seen that in the 25 years of George Austen's guidance the Electric Service League has emulated the fabled little acorn that attained stature as a full-fledged oak. With the co-operation of the Ontario Hydro and the support of the municipalities, "great expectations" are in order for Red Seal in Ontario.

As to what he is going to do with all that leisure time on his hands Mr. Austen is not overly specific, except on one point: He will be busy. "If I really retired" quoth he, "I would be dead in three months from inactivity."

Future Plans

Although Mr. Austen has what he terms "a congenital dislike" for announcing untried plans in advance, preferring to wait until they become a "fait accompli," he did admit having plans for starting a Canadian Business Index to show the rise and fall of business trends in Canada. Such an undertaking could assume monumental proportions. However, such pioneering tactics have no perils for George Austen with the experience of founding and propagating the Red Seal plan behind him. For many years his leisure hours have been devoted to the study of economics, so much so that a friend once told him he should have been a financial editor.

Another venutre tabled for the future is a trip to the sun-drenched isles of the Caribbean Sea with no purpose other than to relax and enjoy the scenery. Lending strength to the probabilities of this sortie actually taking place is the fact that it has the hearty endorsation of Mrs. Austen. Certain it is that whether it be a cruise in the tropics or a perusal of financial topics, George Austen can embark on his choice with the satisfaction of a good job well done to keep him company. He made his mark in no uncertain fashion during his brief career in journalism and the Red Seal is the indelible reminder of his work on behalf of adequate wiring. However, the unquenchable enthusiasm for work that got that first editorial published at 17 is evident when he expresses the desire to wind up his career "with something outstanding." As he stands on the threshold of retirement he describes himself in these words:

"I feel like a leaky old boat anchored in port safely for 25 years, liberally covered with barnacles, now pulling out to sail uncharted seas."

Pleasant sailing and favorable winds, George Austen!

FREQUENCY CHANGER

(Continued from page 18)

Usually this is done through a worm and gear arrangement, strong enough to overcome the friction of the cradle mounting and the force acting on the stator due to the electric load."

"It is done while the set is running?" we asked.

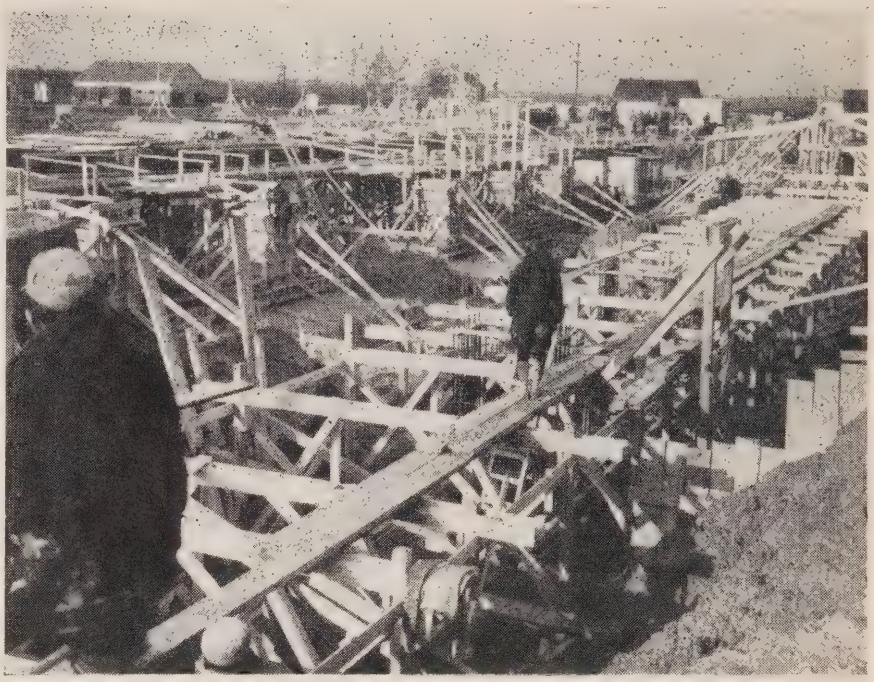
"Of course," returned the engineer. "We don't hold up power loads to our consumers for little things like that. What I was going to tell you was that here at Scarborough, instead of the worm and gear arrangement, we use an hydraulic piston attachment. It is operated by oil at a pressure of 3,000 pounds to the square inch. The piston diameter is 6 inches and the stroke is 4 feet."

Control Room

Scarborough, we were told, would have one of the finest and best equipped control rooms of any station on the Hydro system. At the time of our visit the carpenters and plasterers were still at work, but the observation windows, extending in a great bay, were all in place, and from them we were able to obtain an uninterrupted view of all the transformers and switching equipment.

Rummaging in our pockets for tobacco as we speeded back home, we inadvertently pulled out the diagram the engineer had given us along with the pouch and it slipped to the floor of the car—blank side up. Before we could interfere, our friend had retrieved it for us. He fancied we detected the faintest trace of a smile as he handed it back to us. But he did not turn the paper over. And made no comment. He was a gentleman, anyway.

New Project Under Way Near Sudbury



FORMWORK FOR the concrete footings which will support the steel frame of Hydro's new frequency changer station near Sudbury. The station is scheduled to come into service on December 1 of this year with one 25,000 kv-a. changer set, but provision is being made in construction for the ultimate addition of two more machines of similar capacity. With its switching, transformers and machine shops, the Sudbury station will perform a similar function in the North to that of Westminster or Scarborough in the South. A tie-in will be made with 25-cycle power originating at the Commission's Abitibi Canyon development and with the 60-cycle power generated at Hydro's new Tunnel Site project on the Mississagi river some 125 miles west. The Sudbury station will be the "broker" for power loads of either frequency, passing them on to consumers, "parcelled" according to their requirements. Some 250 men are employed in construction at Sudbury and are housed in a spacious modern camp which extends over approximately 20 acres.



AT THE dinner held recently in Toronto by The Electric Service League of Ontario in honour of the retiring Manager, George W. Austen. HEAD TABLE (left to right)—John F. Mowat, Acting Manager and Secretary-Treasurer; A. W. J. Stewart, 2nd Vice-president; M. J. McHenry, George W. Austen, J. A. Blay, President; E. M. Ashworth, Norman Franks, R. A. Crichton. LEFT TABLE (left side, front to back)—H. H. Gardner, F. W. Peasnell, G. W. Patterson, George Nicol, A. McTavish, Field Superintendent. (Right side)—A. V. Armstrong, 1st Vice-president; G E. Chase, T. E. Dietrich, Ron Mathieson, L. L. Hartman. RIGHT TABLE (left side, front to back)—F. S. Babcock, M. P. Tuteur, H. V. Hohs. (Right side)—F. R. Jeffrey, H. L. Wright, Bert Merson and J. S. Keenan.



When cooks disagree the results may be rather disappointing for those who have to eat the food. As a consequence the food may not be eaten and this plays havoc with the budget. Meat is the big item of expense and therefore its cookery should be of first importance. Tender roast beef (rib, porterhouse, rump or sirloin) should be placed in an open roasting pan with a little dripping over the lean part and seasoned with salt and pepper. Have the oven preheated to 350 degrees. For rare rib roast allow 18 minutes per pound and well-done 25 minutes per pound.

* * *

To save electricity, leave roast at room temperature one hour before you plan to cook it.

* * *

With winter appetites our supply of preserves soon dwindles, but this is the season for making marmalade. There are the large, rough skinned oranges, heavy grapefruit and yellow lemons. We use one of each fruit. These are shaved thin (seeds removed) and put in a large kettle with 15 cups of water. Bring to boiling point, then simmer slowly for forty-five minutes. Let stand until cool. To each 2 cups of prepared fruit, add 1½ cups of sugar. Cook to jelly stage and bottle in sterile jars. Cover with melted paraffin when cool.

* * *

Sweethearts and roses are almost traditional with Valentines. Perhaps Napoleon Bonaparte paid one of the nicest compliments to his sweetheart when he said. "Come into the garden, I want the roses to admire you."

The ancient Norsemen believed apples to contain the elixir of life and when they felt old age creeping on they ate them in quantity. Today, apples provide the makings for countless fine dishes. Don't forget to use a stainless steel knife in paring apples, as metal often causes discolouration and gives a metallic flavour to the fruit. Sprinkle the pieces with lemon juice to prevent discolouring.

* * *

Luck has nothing to do with a successful cake. Success depends upon a good recipe with ingredients in the proper proportions, careful measurement of ingredients, proper mixing and finally, baking at the right temperature.

* * *

The kitchen mop has acquired a new look! Cellulose spun yarn, one quarter inch in diameter when assembled into a mop, is light weight and chamois-coloured. Sponge yarn picks up five times its weight in water. Also, an extra mop of this size is useful to apply wax.

* * *

Young bride's cookery can compete favorably with grandmother's favourites. In a small streamlined apartment I saw a pumpkin pie made with canned pumpkin, evaporated milk, eggs, spices to taste and baked in quickly made pastry from packaged mix. It was very good.

* * *

Lemon Snow made with plain gelatine may be poured into a ring mould. When preparing for the table, turn onto a large plate and fill the centre with drained, canned fruit cocktail. This may be topped with whipped cream or served with sauce made from egg yolks and fruit juice.

* * *

Something with margarine that we've tried with our first sample—Cheese Rolls: Blend together to creamy consistency, ¼ pound margarine with one four-ounce package of cream cheese and stir in 1½ cups of pastry flour. Roll dough thin into rectangular shape. Cover dough with jelly or brown sugar and finely chopped nuts. Roll together like a jelly roll; wrap in waxed paper and chill in electric refrigerator for several hours. Slice, arrange pieces on broiler pan and toast both sides under broiler heat.

* * *

Do you know? Put lemons in hot water or roll them a minute before squeezing. More juice that way.

* * *

Any mincemeat or cut peel left over? Add two tablespoons to two cups of apple-sauce, which may be a little tasteless at this time of year.

* * *

Don't try to peel withered carrots. Soak in cold water for two hours and they may become crisp.

* * *

Plastic crochet and knitting needles when not in use should be wrapped in waxed paper and put in a box. This prevents them from warping and becoming brittle.

ORANGE CAKE

¾ cup margarine
3 eggs
4 teaspoons baking powder
¾ cup milk
1½ cups fine granulated sugar
2¾ cups once-sifted pastry flour
½ teaspoon salt
¼ cup orange juice
1 tablespoon lemon juice

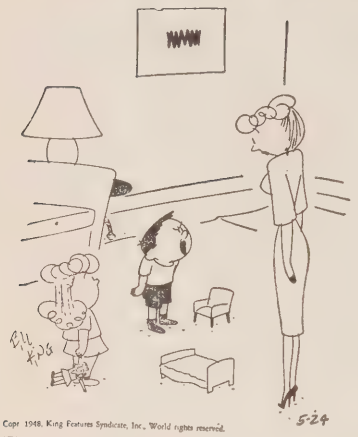
1. Cream margarine and blend in sugar gradually.
2. Add well beaten egg yolks a little at a time, beating after each addition.
3. Mix and sift flour, baking powder and salt twice. Add to margarine mixture alternately with milk.
4. Add fruit juices and lastly fold in stiffly beaten egg whites.
5. Turn into buttered and lightly floured layer cake pans and bake in electric oven (375 degrees) for 35 minutes.
6. Fill and top with Orange Icing.

ORANGE ICING

¼ cup margarine
2 cups icing sugar
Grated rind of 1 orange
Orange juice

Cream margarine and add orange rind. Add icing sugar gradually using enough orange juice to allow mixture to spread.

Lighter Lines



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"Your daughter and I are playing house, Mrs. Adams, and I don't want any mother-in-law trouble!"

Groom: How did you make this cake, dear?

Bride: Here's the recipe. I clipped it out of a magazine.

Groom: Are you sure you read the right side? On the other side it tells how to make a rock garden.

* * *

"What did the comedian say when they threatened him with a rotten egg?"

"You can't make me fall for that old yolk."

* * *

Diner: What kind of pie is this?

Waiter: What does it taste like?

Diner: Glue.

Waiter: Then it's apple. The cherry pie tastes like putty.

* * *



"So! Playing post office again!"

Man in Streetcar: Lady, will you please get off my foot?

Woman in Streetcar: Why don't you put your foot where it belongs?

M.I.S.: Don't tempt me, lady, don't tempt me

* * *

The philosophic taxi man says: It's not the work I enjoy, it's the people I run into.

* * *

Sgt.: That new recruit used to be a bookkeeper.

Lieut.: How do you know?

Sgt.: Whenever he stands at ease he puts his rifle behind his ear.

* * *

Schoolboy definitions:

Antimony: what a man pays his divorced wife.

Berserk: an ex-chancellor of Germany.

Dalliance: surrealistic painting.

Feudal: useless.

Hennery: one of the kings of England.

Independence: what a country enjoys till it gets into trouble.

Life: just one darn thing after another.

Mississippi: the wife of Mr. Sippi.

Oboe: an ill wind that nobody blows good.

Serf: to be of surface (cf. "They only serf who only stand and wait").

Travail: to go from one place to another.

Villein: a bad sort of servant.

Wry: twisted grain.

* * *

"Burglars broke into my house last night."

"My goodness, what happened?"

"My wife's relatives yelled 'We were here first' and chased them away."

* * *

He: Have you ever been mistaken for a man?

She: No, have you?

* * *

The difference between a cutie and an old maid is that the cutie steps out with the johnnies and the old maid stays home with the willies.

* * *

Teacher: If you started at the North Pole and walked due north for a hundred miles, where would you end up?

Pupil: In a padded cell.



"If we want to get home in time for dinner, one of you will have to swallow your pride."

You can lead a girl to Vassar but you can't make her think.

* * *

Last Christmas, Santa Claus gave me a wooden whistle, but it wooden whistle. I changed it for a steel whistle, but it steel wooden whistle. Then I got a tin whistle, and now, boy, tin I whistle!

* * *

Said the cigarette to the bartender: You'd better put me out before I make an ash of myself.

* * *

"Wotcha doin' Sattiday nite?"

"Gotta date."

"An' the next Sattiday?"

"Gotta date."

"An' the next Sattiday?"

"Gotta date."

"Good gosh, babe, doncha ever take a bath?"

* * *



"Plead insanity, Johnny!"



RIDGETOWN CITIZENS turned out in force for the recent Hydro presentation of Junior Power Warden badges to various boys' and girls' organizations, and received tribute from Russ Laurie, the Commission's Western Regional Manager, for never having exceeded their power quota. This, said Mr. Laurie, was largely due to the efforts of Mr. E. A. Hodgson, Secretary-Manager of Ridgetown P.U.C., and his staff, and the co-operation of all organizations in the area. Above, Adam Smith, Consumer Service Engineer, pins a badge on Cub Douglas Swayze as Cubmaster Cecil Stover looks on.



SEEN IN centre of back row in the above reproduction is Mr. Hodgson, who together with Harold Hillier of the H.E.P.C.'s Promotion Department, planned the evening's program. At right of the picture is Mr. Riebel, presenting a badge to Scout Bob Burrell. Below, left, leaders of the four organizations receiving badges pose before Hydro conservation posters. Left to right, G. C. Craven, Scoutmaster; Mrs. William Rivers, Leader, Junior Girls' Auxiliary; Miss Janet Turnbull, Leader, C.G.I.T.; Cecil Stover, Cubmaster. Below, right, Frances Rushton, C.G.I.T. member, receives her pin from A. T. Ward, Ridgetown P.U.C. Commissioner. The badge symbolizes a pledge taken by the boys and girls to promote the conservation of electricity in every way possible.



BIG-EYED CUBS, above, are enjoying a joke with Ad Smith as he adjusts Cub Harvey Bishop's badge. Arl Conlin, centre, waits his turn. Below, Chairman A. E. Ri of the Ridgetown Public Utilities Commission makes a pre tation to Scout Charles Scoyne. Other two boys Jack Evans, left, and Bruce Stinson.







A. H. Frampton Accepts Key Post With English Electric Company

•

Is Recipient Of Handsome Presentation From Hydro Colleagues

ARTHUR H. FRAMPTON, former Deputy Assistant General Manager—Engineering of The Hydro-Electric Power Commission of Ontario, who is now General Manager of the English Electric Company of Canada Limited with headquarters at St. Catharines.

Mr. Frampton who, at 49, is one of the youngest of Canada's top-ranking executive engineers, officially took over his new duties January 1 after having been identified with the Commission for over 30 years.

Coming from his native England in his early teens, he eventually became associated with the Ontario Hydro as a laboratory assistant while carrying on his studies at the Central Technical School night classes. During the winter seasons, from 1921 until 1924, he attended the Faculty of Applied Science and Engineering, University of Toronto, and graduated with the degree of B.A.Sc.

In 1925, Mr. Frampton was appointed assistant engineer in the station section of the Commission's Electrical Engineering Department. In 1930, he became assistant to the chief electrical engineer and, in 1938, assistant head of the Electrical Engineering Department. In May of last year, following reorganization of the Commission's engineering and administrative structure, Mr. Frampton was named Director of Engineering and, early this year, he was called upon to take over the duties of Deputy Assistant General Manager—Engineering.

Widely known and a prominent member of many engineering bodies, Mr. Frampton is President of the Engineering Alumni Association and is also actively identified with the Alumni Association of his Alma Mater.

Mr. Frampton was the recipient of a handsome presentation from his Commission colleagues who expressed their sincere wishes for his continued success in taking over his new and highly responsible duties.

•



ARTHUR H. FRAMPTON

May Acquire "Kam" Plant

Negotiations are proceeding for the purchase of the Kaministiquia Power Company by The Hydro-Electric Power Commission of Ontario, Commission Chairman Robert H. Saunders announced recently. Located about 20 miles west of Fort William, the "Kam" Power plant has a rated capacity of 24,000 kilowatts (32,000 hp).

If Hydro proceeds with the purchase, the power would be tied in with the Commission's Thunder Bay System or Northern Ontario Properties. The purchase would give the Commission control of the flow at the plant and also control over water storage facilities in the Kaministiquia River watershed. The privately owned "Kam" plant, although over 25 years old, is reported to be in excellent condition and, it is stated, would be an asset to the Commission, when building the proposed new plant at Silver Falls, on the same river.

•

ANNUAL CONVENTION

This year the annual joint convention of the A.M.E.U.-O.M.E.A. will be held at Royal York Hotel in Toronto February 28 - March 2.



MAIN DAM of the Pine Portage development, when completed, will extend from a point near the two pine trees in the foreground of this picture to the cleared area in the left background, a distance of approximately 3,000 feet.

Will Extend Plant

Plans for extension of the plant of the Pembroke Electric Light Company on Black River were announced recently. Proposed extensions at Waltham and Pembroke will substantially increase generating capacity. The project will commence shortly, it is anticipated, although it is not expected that the first portion of the projected extension will be completed until late in 1950 or early in 1951. Estimated cost of the extension is $800,000.

Included in the plans are the extension of the power house at Waltham and the installation of two new units, each generating 2,250 kilowatts (3,000 hp). One of these new units will be installed as soon as possible, and will increase the capacity of the plant by 50 per cent. Measures will be taken to increase storage facilities, both at the power house and farther up the river. The erection of a substation in the east end of Pembroke is planned, as well as the installation of two new diesel auxiliary units at a local substation.

The projected east-end substation will serve all customers east of the Muskrat River, while those west of the river will be served from the present substation.

Combined Bills

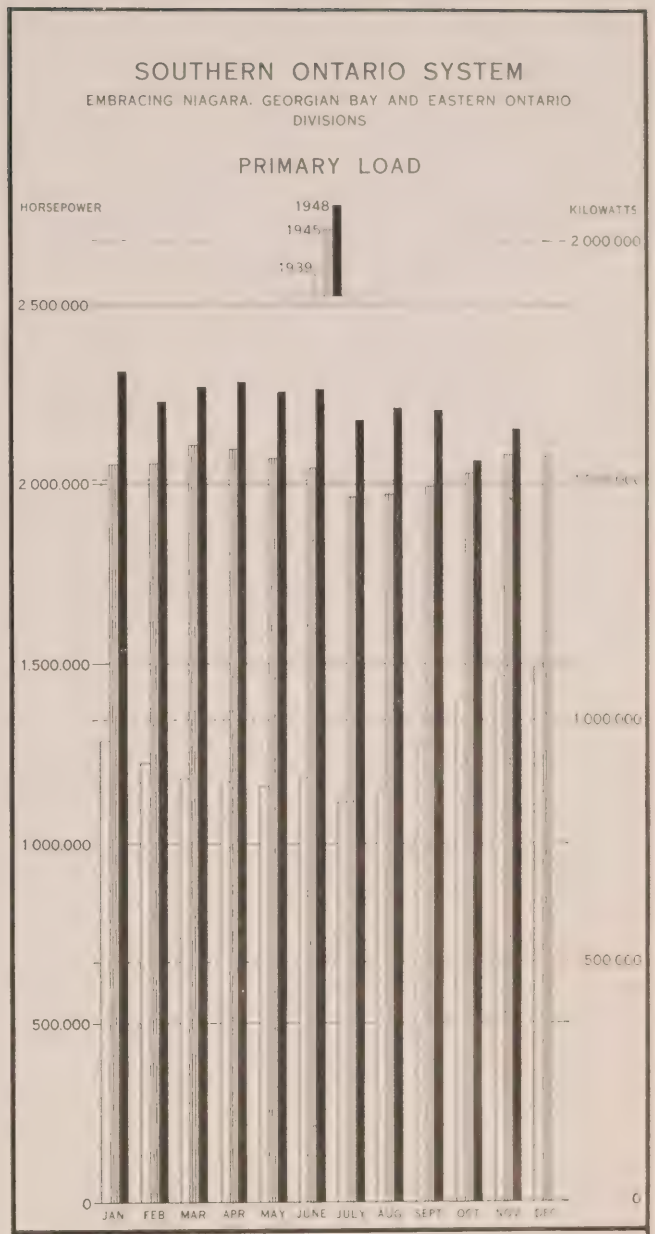
Residents of Listowel may receive a momentary surprise when they see the increasing amount of their bills from the Public Utilities Commission. Actually the "increase" will be the result of a new system of billing which will be instituted later this year. Under the new system, bills for electricity, flat rate heaters and water bills are combined. Formerly citizens of Listowel received separate bills for these services. R. B. Hanna, Superintendent of the Listowel Public Utilities Commission, announced that the first bills under the new system would likely be issued about the first of March and once every two months after that time.

U.S. Power Shortage

United States is having its own headaches in regard to power. According to the Daily News Digest, published by the Feredal Power Commission, the Pacific Northwest is in the grip of its worst power shortage. Although last year's situation was bad in Oregon and Washington, this year it is worse.

Industries have been affected by the serious situation. Some plants have been asked to end day shifts at 4:30 p.m. instead of 5. Others have been urged to postpone certain power consuming operations until late at night when the demand for power is not as great. Throughout the Northwest campaigns for power conservation are under way. In some cities, such as Ellensburg, Washington, the city council has banned the installation of electric space-heating devices. Unless the conservation campaign brings the desired results, switches will be pulled.

Four big Northwest aluminum plants, which comprise 47 per cent of the U.S. aluminum productive capacity, have already experienced blackouts when switches were pulled in their plants, the Daily News Digest also points out.



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KA. NOVEMBER 1948	NOVEMBER 1947	PER CENT
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System	1.784.040	1.886.420	— 5.4
Thunder Bay System	132.735	113.410	+ 17.0
Northern Ontario Properties	223.685	193.487	+ 15.6
TOTAL	2.140.460	2.193.317	— 2.4
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System	1.611.100	1.705.270	— 5.5
Thunder Bay System .	132.735	115.110	+ 15.3
Northern Ontario Properties	252.845	193.397	+ 30.7
TOTAL	1.996.680	2.013.777	— 0.8

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This interesting camera study depicts the sharp outlines of the aggregate conveyor structure at Hydro's Pine Portage Development against a sparkling blanket of snow.

HYDRO NEWS

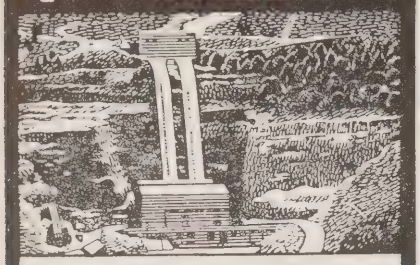


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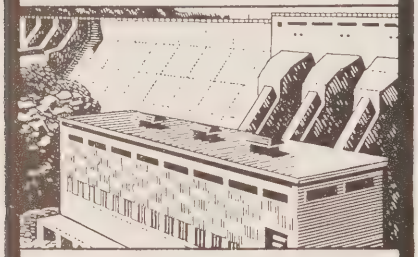
4 POSTWAR DEVELOPMENTS COMPLETED



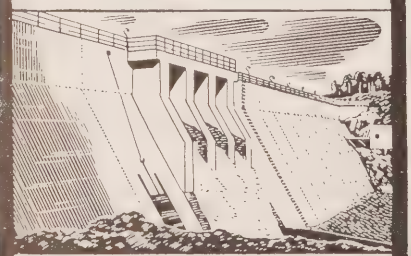
1 DECEW FALLS (Extension)—Niagara District. 57,000 kilowatts (77,000 horsepower). Placed in service September, 1947



2 EAR FALLS (Extension)—English River, N. West. Ont. 5,500 kilowatts (7,500 horsepower). Placed in service June, 1948.



3 STEWARTVILLE—Madawaska River, East. Ont. 60,000 kilowatts (80,000 horsepower). Placed in service September, 1948.



4 AGUASABON—Aguasabon River., N. West. Ont. 40,000 kilowatts (53,000 horsepower) Placed in service October, 1948.

Hydro Expands in Ontario

10 NEW POWER PROJECTS DEVELOPING OVER 1,500,000 HP

Since 1945, Ontario has experienced a growth in demand for electrical energy without precedent in the history of the Province. To meet present and future needs, The Hydro-Electric Power Commission of Ontario is now speeding to completion the greatest construction program it has ever undertaken. Ten new plants will swell the power supply to industries, homes and farms by approximately 1,135,000 kilowatts (1,520,000 hp).

A frequency conversion program for a section of the Province is also under way so that ultimately 60 cycles will be the standard frequency throughout Ontario.

NEW POWER DEVELOPMENTS UNDER CONSTRUCTION

PINE PORTAGE—Nipigon River, N. West. Ont. Initial capacity, 60,000 kilowatts, (80,000 horsepower). Ultimate capacity, 120,000 kilowatts (160,000 horsepower). In service December, 1950.

CHENAUX—Ottawa River, East Ont 119,000 kilowatts (160,000 horsepower). First six units scheduled for service in 1951 Remaining two units in 1952

*DES JOACHIMS—Ottawa River, East. Ont. 358,000 kilowatts (480,000 horsepower). First four units scheduled for 1950, remaining four in 1951

WINDSOR STEAM PLANT—Windsor, Ont. 180,000 kilowatts (240,000 horsepower). Scheduled for completion in 1951

LA CAVE—Ottawa River, East. Ont. 153,000 kilowatts (204,000 horsepower). Scheduled for completion, 1952. Six initial units with provision for additional two

TUNNEL G.S.—Mississagi River, N. East. Ont. 42,000 kilowatts (56,500 horsepower). Scheduled for service early in 1950

*DES JOACHIMS DEVELOPMENT—
On completion this will be one of Hydro's largest plants, second only to the 500,000 horsepower Queenston-Chippawa Station.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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FRONT COVER

TYPICAL mid-winter scene at Niagara is shown in this unusual picture taken by Bud Barnett, Niagara Falls photographer. Each winter, icefloes from Lake Erie and the upper Niagara river jam up in the lower part of the river below the cataracts forming a bridge of ice that spans the stream from the Canadian to the American shore. Taken from beneath the arch of the Rainbow traffic bridge, the photograph shows the spray-shrouded American falls at the left and the Horseshoe or Canadian falls in the background. At the extreme right, at the bottom of the gorge is Hydro's Ontario Power Plant.

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TAKEN FROM the Ontario side, this unusual view of Des Joachims Development shows the temporary low-level access bridge across the Ontario channel to the powerhouse site, with the Bailey Bridge forms for the main dam in the background.



CAUSE FOR GRATIFICATION

THERE is cause for sincere and justifiable gratification over the improved power supply condition in Ontario.

Many factors have combined to ease the critical situation which existed last fall, particularly during October and the early part of November. In this connection Commission Chairman Robert H. Saunders has made special mention of "the magnificent effort" of all classes of consumers, including housewives and farmers, in helping Hydro save power. He made special mention, too, of the helpful and highly effective assistance received from both labour and industry by rearranging work schedules in factories.

In these expressions of appreciation, the Chairman also directed attention to the outstanding public service rendered by the press and radio stations. Through these media, the public were kept fully informed about the day-to-day power supply situation and were reminded of the vital need for saving electricity.

In other words, the people of Ontario, have given an impressive demonstration of what can be accomplished by team play in meeting an emergency.

Having experienced some of the problems presented by a critical shortage of power, which is so vitally interwoven with the pattern of daily life, people of Ontario can readily sympathize with their fellow Canadians in their sister province of British Columbia. Their plight in the matter of power supply has been serious in extreme. Industrial power consumption in B.C. had to be cut by nearly a third and domestic consumption by fifty percent, and factory workers were losing an estimated total of $270,000 weekly in wages.

It will be recalled that at the opening of the important Bridge River hydro plant in British Columbia last October, when Ontario was experiencing the most critical period of her power shortage, officials confidently predicted that B.C. would have "an ample, uninterrupted flow of electricity" to meet all demands.

These predictions, obviously made in good faith, serve to accentuate the fact that Nature has been the villain sustaining the major role in the power shortage drama. The people of Ontario are now in a position to fully appreciate the very vital way in which water is associated with the generation of hydro power.

Reports, not only from other parts of Canada and the United States, but from Britain and many European countries show that drought conditions have resulted in drastic curtailments in the available supplies of power. In Scotland, Scandinavian countries, Switzerland, Spain, France, Italy and elsewhere, including New Zealand there has been a lack of rainfall "in the right places."

That phrase "in the right places" means the watersheds which feed the dams where water is stored to be utilized as required by the various plants which depend upon storage water for the generation of power.

It is understandable that many people could not, at first, readily appreciate these facts. However, the critical effect of drought conditions elsewhere and the marked improvement in Ontario's power supply situation after "the rains came"—"in the right places"—have served to clarify the technical aspects of the whole problem in a way in which they can be understood by the layman.

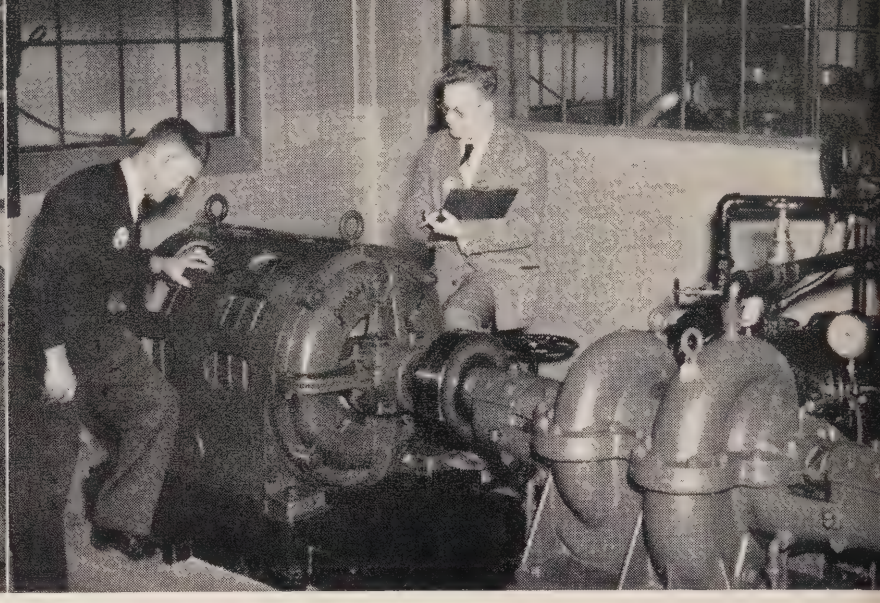
As the power supply situation has improved in Ontario, the benefits, in line with the Commission's policy, have been passed along immediately to the consumers. On February 1, for example, as soon as notification was received from the Gatineau Power Company in Quebec that deliveries to Hydro would be substantially increased, allocation of power on a quota basis to Southern Ontario municipalities was discontinued.

And again, on February 15, because of continued improvement, Commission Chairman Saunders announced a limited suspension of regulations affecting the use of electricity for commercial purposes during the night, between 7 p.m. and 7 a.m. from Monday to Friday, and over the weekend, from 7 p.m. Friday to 7 a.m. Monday.

At the same time, the Chairman has cautioned all Hydro consumers that the Commission is still under the imperative necessity of keeping a close rein on the unrestricted use of electricity.

It would seem logical and reasonable to assume that all who are privileged to be associated with Hydro these days must be conscious of a spirit of achievement and that the people of Ontario share that feeling as they march forward with their Hydro to new and greater attainments in the future.





TYPICAL SCENE in Southern Ontario homes as Ontario Hydro's big frequency conversion program gets under way is shown on the left. Here a survey of household electric equipment in a Scarboro Township dwelling is being made by members of the Canadian Comstock Company, retained by Hydro to handle the conversion surveys. In this photo, Richard Gamache, chief supervisor for the domestic survey, is shown, left, reading the details about a washing machine motor to Neil B. Willoughby, another surveyor, who is listing the data. Looking on is the housewife, Mrs. Betty Atkins, and her watchful Pomeranian. Change-over from 25-cycle to 60-cycle power requires a thorough survey of industrial, commercial and domestic electric equipment before the actual "swap" in equipment is made. First area in Southern Ontario to experience the frequency conversion will be Scarboro Township on the eastern outskirts of Toronto. A typical industrial survey scene above right, shows Thomas Cameron, industrial surveyor, reading the information on the 150-horsepower motor on the main pump in Scarboro Pumping Station to M. A. Cook, chief supervisor.

Frequency CONVERSION

by

Charles G. MacIntosh
Hydro News

FREQUENCY conversion to the average layman may seem to be just a routine operation. To Mr. and Mrs. John Citizen, it may appear that this merely means removing 25-cycle motors and replacing them with 60-cycle equipment in homes, stores or industries.

But anyone who has talked to Hydro engineers directing the conversion program will not entertain that impression long. Stated simply, frequency change-over in the 25-cycle areas of the Southern Ontario system is a tremendous undertaking that involves a vast amount of planning, careful inventory, skillful engineering, accurate ordering of new equipment and exact timing.

Many months have been devoted to detailed planning in order that the entire program may be carried out smoothly and with the minimum of interference and inconvenience to consumers. At present, preliminary surveys are under way in a number of areas to determine what will be required in the way of equipment to make the change-over.

First on the books for the frequency conversion project is the Scarboro area, which as Hydro engineers point out, will be the "guinea pig" for "Operation Conversion." The things learned in the Scarboro undertaking, now proceeding, will serve to guide Hydro men in the efficient change-over of other Southern Ontario areas.

Rapidly on the heels of the Scarboro change-over will come frequency conversion operations in the Sarnia area, which likely will be carried out simultaneously with change-over in the London area. Certain sections of the Hamilton district probably will be done next. This program of conversion by areas will be carried out across the whole of Southern Ontario until the time—possibly about 1964—when 60-cycle will, for the most part, have replaced the present 25-cycle areas in Southern Ontario.

The "zero hour" for Hydro men to start their friendly invasion of homes, stores, offices and factories in the Scarboro area and begin swapping 60-cycle equipment for the present 25-cycle equipment has been set tentatively for October 1. Before the end of December of this year, it is expected, the whole Scarboro operation will have been completed.

Survey Work Now Proceeding With Scarboro First On List In Tremendous $200,000,000 Change-Over Project.

Exhaustive Survey

The preliminary work in the Scarboro conversion necessitated an exhaustive survey by Hydro men to find out what equipment would be needed for the change-over. A total of 1,100 homes were visited in the various districts to determine what electrical equipment people actually have in their homes. This survey included visits to the largest and most pretentious dwellings as well as to the humblest cottages, giving a cross-section check on the population so that the domestic equipment requirements can be properly estimated. The findings from this inventory will be used as a yardstick in issuing stock bulk orders for motors and other electrical equipment.

Other steps in the survey work include visits to stores and offices to examine the equipment of these commercial concerns and learn what equipment will be needed.

But the biggest task of all in the entire conversion program will be the change-



SUPERVISOR GAMACHE, right, and Neil Willoughby, a surveyor, tell Mrs. Betty Atkins that the motor on her combination vacuum cleaner and waxing machine is universal and will not need replacing.

over of industrial plants. This is literally a gigantic task which requires competent checking and engineering skill of the highest order. Individual machines in many cases must be studied to determine what changes are necessary in the pulleys, gears and other mechanism.

Production in factories cannot be interrupted and it is with this fact in mind that Hydro engineers and the contractors, who will carry out the work for the Commission, are studying industrial plants. It will be necessary to take a thorough inventory of each factory's needs so that a complete list of requirements may be compiled for ordering. Everything needed must be on hand when the actual "swap" is made.

Expect Little Interruption

For the average householder it is expected that there will be little inconvenience or interruption in service. The men who will enter the homes to make the change-over may start after a Monday, the traditional wash day, to effect the necessary changes in washing machines, or other occasionally used appliances. Refrigerators, however, will be left to the day of conversion and replacement units will be ready in trucks outside the homes so that a swift conversion can be made.

The ordering for the domestic, commercial and industrial requirements of the area being changed over is the task of Hydro's Purchasing Department. After instructions are received from the engineering and material control staff, orders will be placed for the required materials.

Operate According To Plan

All this involves a big problem of stock-piling for Hydro because the necessary equipment must be in the areas when the deadline for conversion approaches. In the case of industrial equipment, much of it may be sent directly to the individual plants.

At the deadline, Hydro engineers will operate according to a prearranged plan in the chosen area, working from the main power feeder line and cutting off districts in a systematic way. Every phase of the work in each district previously has been charted even to the tracing of all the houses fed by the individual transformer. This is done to assure speed and maximum efficiency in making the change-over.

The key men who are directing the big conversion task, H. H. Leeming, Director of Conversion; J. J. Jeffery, Special Assistant; G. R. Huxtable, Accountant; W. G. Robertson, Planning Adviser; W. R. Harmer, Consumer Service Engineer; D. Ross, Project Manager; H. A. Smith, Conversion Engineer; R. N. Kirby, Materials Control Officer; and L. V. Hunt, Meter Conversion Engineer, have been working at top speed for several months now. They are handling what is considered the biggest job ever undertaken by a public utility in Canada. By the year 1964, it is expected that every home, store, office building, factory, farm house and barn in the conversion area will have been visited and the electrical equipment will have been changed over to 60-cycle.

Figures Tell Story

To gain some idea of this gigantic task, Hydro engineers have given out these figures on the equipment which they estimate must be converted or replaced:

1,750,000 motors varying in weight from many tons to a few ounces and producing from several thousand horsepower to what might be termed "mosquito power." These include:—

550,000 washing machines,
300,000 electric refrigerators,
400,000 electric clocks,
100,000 furnace blower units,

Thousands of combination radios and record players,

Electric toy trains, many vacuum cleaners and floor polishers plus thousands of pieces of industrial and commercial equipment,

A vast amount of equipment installed in the stations of the Commission and of the local commissions.

Cost of the conversion is estimated in the neighbourhood of $200,000,000, and the Commission will bear the cost of the changes for domestic and commercial users. Industrial plants will be required

THIS ELECTRIC sewing machine has a universal motor, Supervisor Gamache points out to Mrs. Betty Atkins and her niece, Margaret Harrison. This is another piece of equipment that will not have to be changed.





RICHARD GAMACHE, supervisor, is shown checking the data on the motor of a refrigerator in a Scarboro Township home. His assistant is Neil Willoughby, right, who is recording the information.



ANOTHER IMPORTANT unit that must be changed is the motor on a domestic oil burner. Supervisor Gamache, left, is reading the information on the motor to Neil Willoughby, surveyor.



ELECTRIC DOOR bells in homes will have to be changed over. Here Richard Gamache is pointing out to Mrs. Betty Atkins that her door bell is built for 25-cycle power.

to pay about one-third of the cost of alterations or replacements.

It has been revealed that the biggest portion of the cost will be for industrial conversion, $64,986,000. Conversion of domestic equipment is next at $54,658,000 while conversion of municipally-owned transformation and distribution facilities is estimated at $20,586,000. Changing over Commission-owned transmission, transformation and distribution facilities will involve a cost of approximately $26,914,-500. Changing or adjusting commercial equipment will cost $13,104,000.

Hydro engineers estimate that from now until conversion is completed the actual saving made by reason of the conversion will be about $46,000,000, made up as follows: $32,000,000 by reason of reduced capital expenditures required to supply load growth and $14,000,000 as additional revenue secured from the sale of secondary or surplus energy.

Between the years 1964, when, it is expected, conversion will have been completed, and 1981, an estimated additional saving of $140,000,000 will have been effected. This is broken down as follows: $108,000,000 by reason of reduced capital expenditures and $32,000,000 revenue from the sale of secondary or surplus power.

Benefits of 60-cycle, engineers point out, will include: an end to flickering lights in homes, offices, stores and factories; easy connection with 60-cycle systems in Quebec, New York State and Michigan, providing emergency power during possible shortages or interruptions; availability of a much wider range of equipment and utilization of a wider variety of industrial equipment and power-driven machinery built only for 60-cycle power.

Such is the nature of the project upon which Hydro engineers have embarked to get Ontario "in step" with adjacent territories.

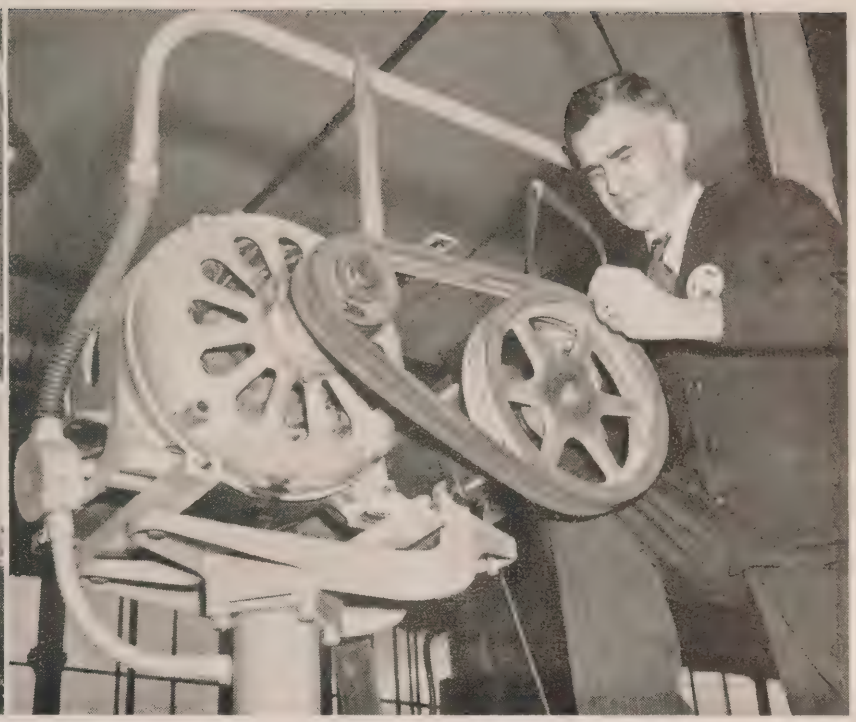


"NO, MADAM, these will not have to be changed," Supervisor Richard Gamache explains to Mrs. Atkins. Certain electric household equipment, such as the mixing machine seen in this picture, is operated by a universal motor adaptable to both 25-cycle or 60-cycle current. The electric kettle and the electric coffee-maker, seen here, function with a heating element and have no motors to replace.



THE POPULAR electric record players in homes will require changes in motors. Supervisor Gamache is taking down data about this machine while Mrs. Atkins and Margaret Harrison watch.

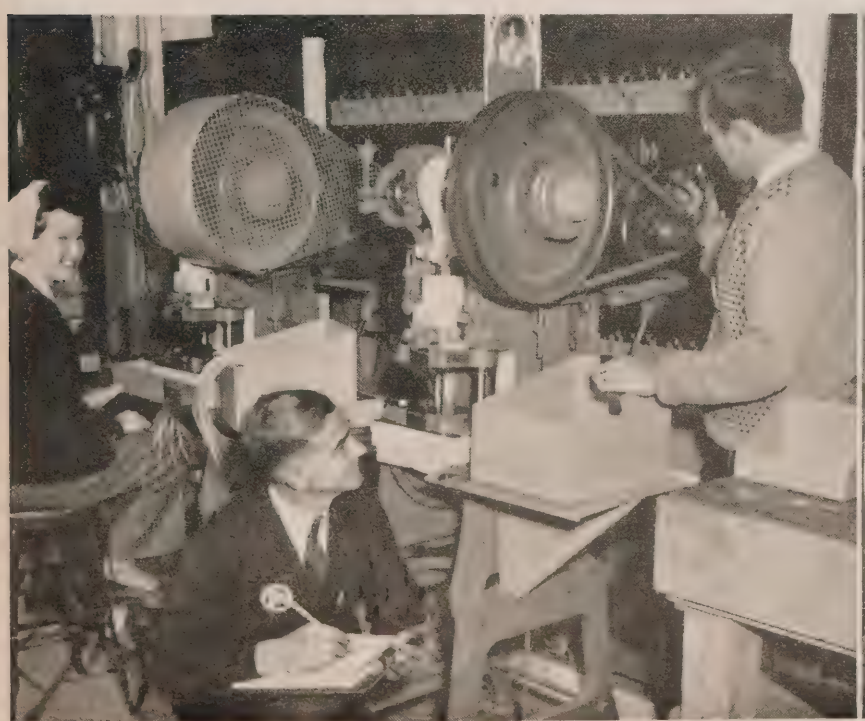




ALL 25-CYCLE motors in industrial plants must be replaced by the 60-cycle type. In the top left picture, Thomas Cameron, surveyor, is shown reading the data on the motor of a nut tapping machine in the Canadian Line Materials plant, Scarboro Township, to Sidney Jones, supervisor. One of the complicated features of frequency conversion in the industrial field is the adjustment of pulleys on machines in factories when present 25-cycle motors are changed to 60-cycle motors. Thomas Cameron, surveyor, is seen top right, using outside calipers to measure the face of a driven pulley on a lathe.

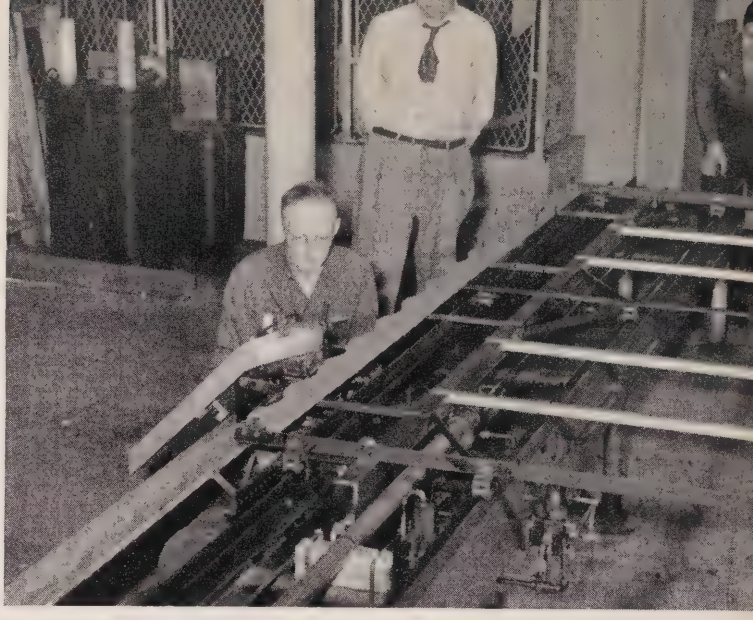
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CHECKING THE motor pulley on this small punch press in the picture at the left is Sidney Jones, using the calipers, while Thomas Cameron, surveyor, is taking down the measurements. Ruth Miller, operator of the machine, is watching their work. At the right, Maurice A. Cook, chief supervisor, is shown recording the data as Sidney Jones checks the motor on a big punch press in the Canadian Line Materials plant.





SO ACCURATE and perfect is the job done by the wavy cutter that no further work has to be done on the "wavy" before this insulation is ready for installing in the transformers. In this picture the inventor, Dave Ewart, is standing watching Jack McLeod, left, and Jimmy Keary in the background, operating the wavy cutter.



"DREAMED UP" MACHINE

David Ewart, Machine Shop Foreman At Queenston Invents Apparatus Out Of Scrap Material—Saves Hundreds Of Man-Hours And Thousands Of Dollars

•

by

C. G. W. MacIntosh

Hydro News

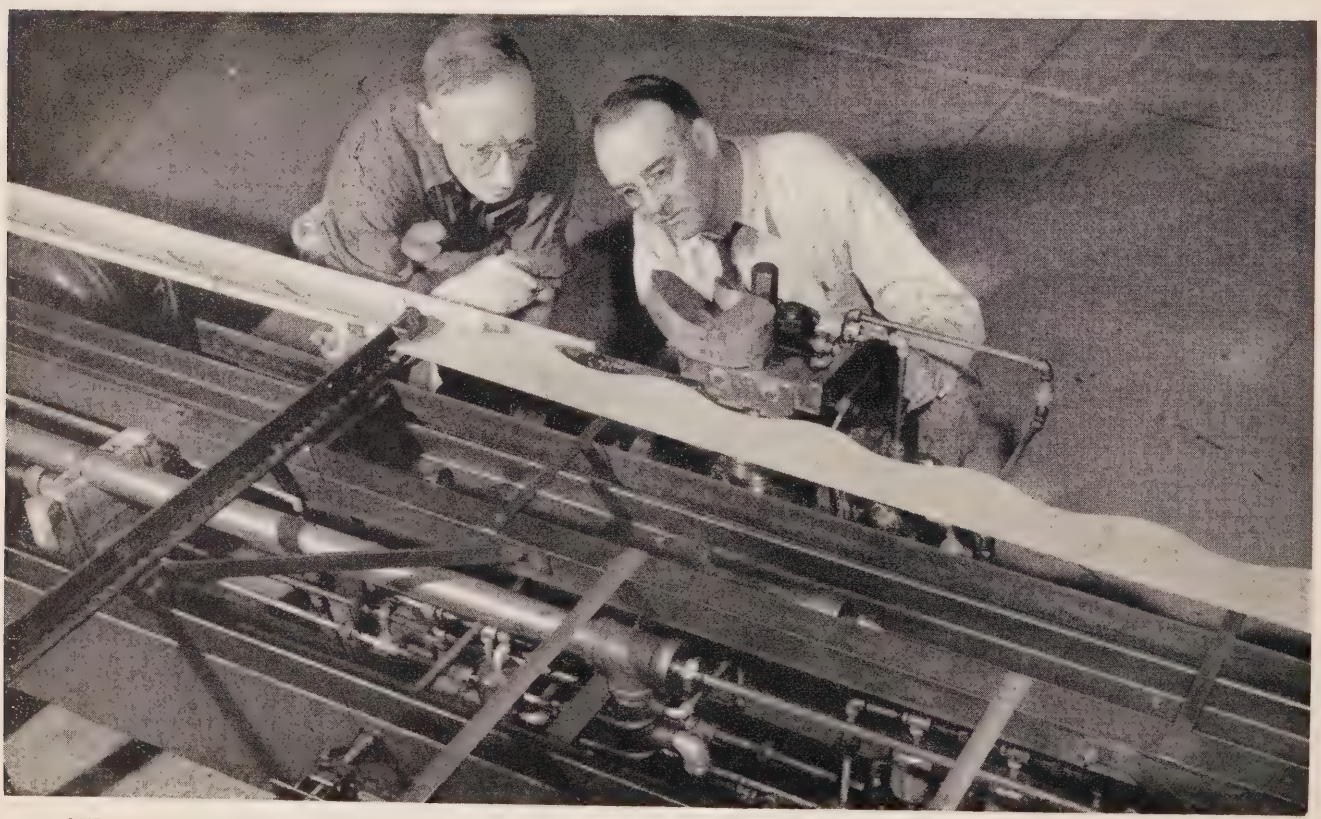
A MACHINE shop foreman with an inventive flair has constructed a machine believed to be the only one of its kind anywhere, that today is saving the Commission hundreds of man-hours and thousands of dollars.

He is Dave Ewart, quiet, retiring foreman at the Queenston power plant machine shop, who "dreamed up" a machine for cutting wavy insulation for transformers and built this tool practically single-handed from scrap material.

The machine, a complicated apparatus with numerous valves, pumps and a punch operating like a sewing machine, cost less than $2,000 to make. Yet it turns out nearly double the amount of "wavys" that seven men could produce in a day, and requires only two men to operate it.

Mr. Ewart, who is reluctant to talk about himself, gave the information

(Continued on page 10)



ONE OF the Commission's top-flight machine shop foremen, Dave Ewart, foreman at the Queenston-Chippawa power plant machine shop, has invented a unique machine, a wavy cutter for cutting insulation for transformers. This machine saves the Commission thousands of dollars and hundreds of man-hours in labor. Here Mr. Ewart, right, is seen at the control valves with Jack McLeod, one of the operators of the machine.

Across Ontario

Hydro's Established Purchase Policy Benefits Industries And Hundreds Of Smaller Business Organizations Throughout The Province

by
Boyd L. Graham
Hydro News

ACROSS Ontario today, industrial and commercial firms, both large and small, are feeling the beneficial effect of the Commission's policy of placing orders with local business organizations whenever possible, Commission Chairman Robert H. Saunders pointed out recently.

"I want to make it abundantly clear to every person in Ontario that Hydro's tremendous construction and expansion program, now under way, entails the purchase of an almost limitless range of equipment and materials and that hundreds of manufacturers, producers and distributors throughout the province are receiving a fair and equitable share of this business," Mr. Saunders declared.

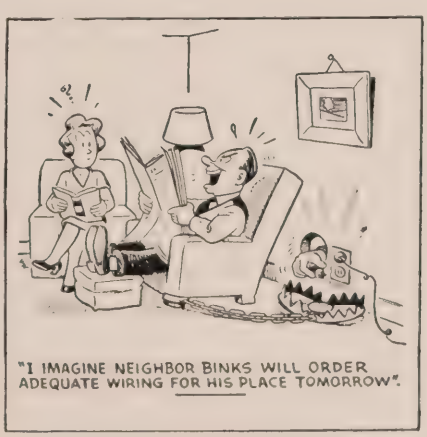
The various undertakings of the Commission—representing the greatest era of development in its history—will involve the expenditure of some $400,000,000 for the building of new power plants, transformer stations, transmission lines and other facilities throughout Ontario, during the next few years. In addition, Hydro spends thousands of dollars annually on maintenance and improvement of its existing facilities. This also necessitated substantial purchases of equipment and materials, he added.

Referring specifically to new construction, Mr. Saunders pointed out that during the past fiscal year, in excess of $90,000,000 had been expended for the building of new power plants, transformer stations, transmission lines, rural lines and other facilities.

Steam Generating Units

Citing a specific example of the large orders which were placed with various firms in Ontario, Mr. Saunders stated: "We have already completed negotiations with a Galt firm to manufacture steam generating units at a contract price of $1,989,990. These new units will be installed in Hydro's new steam plant which is being built at Windsor."

Continuing, he said that orders were placed in various Ontario cities over a 12-month period as follows: Niagara Falls —insulators, $107,133; abrasives $7,200; travelling cranes, $96,000, and steel chain, $3,445; Welland—structural steel, $97,650; transformers, $540,103; rope, $32,050; Merritton—pole line hardware,, $289,418; St. Catharines—transformers and meters (two separate firms), $512,595 and $938,902 respectively; steel chain, $12,833; Dunnville—fencing, $7,766; Hamilton—insulators, $368,690; heavy steel products (five separate firms) totalling $306,026; general hardware, $176,167; generating equipment, $6,420,567; pole line hardware, $474,708: Guelph—copper conductor $255,886; pole line hardware, $256,106; Georgetown—insulators, $6,753; Kitchener—tires and tubes, $21,000; leather gloves, $3,500; Brantford—paint, $23,911; Owen Cound—winch and hoist equipment, $165,336; Sarnia—petroleum products, $522,882; Walkerville—tower and station structural steel, $982,679; Woodstock—specially designed steel truck bodies and trailer, $190,508; Windsor—trucks (two separate firms) totalling $126,745; London—builders' supplies, $40,000; plumbing supplies, $25,000, and trucks $51,777; St. Mary's—cement, $108,330; Tilbury—truck bodies, $28,615; North Bay—general hardware, $102,205; Sudbury—poles and creosoting (three separate firms) totalling $476,000; Port Arthur—poles and creosoting (two separate firms) totalling $798,855; tires and tubes, $18,000; Timmins—lumber, $62,212; Pembroke—general hardware, $59,184; poles, $10,425; tires and tubes, $4,200; Golden Lake—lumber, $19,138; Ottawa—fibreboard, $34,463; Cornwall— fibre conduit, $75,000; Kingston—aluminum sheets and tubes, $105,000; Peterborough—electrical equipment, $1,800,000; Trenton—creosoting of poles, $90,000; Brockville—copper conductor, $523,563; Gananoque—meter charts, $14,837; Belleville—cement, $105,000; conveyor equipment, $87,000; Oshawa —trucks, $214,698.



"I IMAGINE NEIGHBOR BINKS WILL ORDER ADEQUATE WIRING FOR HIS PLACE TOMORROW".

Dealers Receive Credit

In the case of trucks, it was pointed out that the Commission, in most instances, had been able to arrange that truck dealers in various parts of the province receive credit for trucks sold to the Commission for use in the locality where their business is situated.

"This means that although the Commission might purchase trucks from a manufacturer in Oshawa, for instance," the Chairman stated, "a dealer in Northern Ontario where the truck is to be operated will receive credit for the sale."

Another factor, designed to ensure the distribution of as much Hydro business as possible throughout the smaller centres of the province has been the recent establishment of the Commission's Regional Offices. Regional Offices have already or are in the process of being set up in Toronto, Belleville, Ottawa, London, Hamilton, Niagara Falls, Barrie, North Bay and Port Arthur.

In their respective districts, these offices now provide the services of the various Commission divisions, while they also have control of generating stations and transmission lines. Each Regional Manager, is authorized, within certain limits, to purchase materials and equipment within his own region whenever possible, it was also pointed out.

"From the foregoing facts," Mr. Saunders stated, "it will be noted that the Commission's business is conducted on a province-wide basis with all types of concerns, both large and small, benefiting. This is in line with the established policy of the Commission."

Shortage of Basic Materials

During the past three years, however, the supply situation has been very critical, the Chairman asserted, and Hydro has experienced considerable difficulty in securing all the materials necessary to keep its tremendous construction program at an all-out pace.

"Therefore, it will be readily understood that the Commision has, on frequent occasions, found it necessary to purchase materials in short supply from various sources irrespective of geographical locations," he pointed out.

In addition, much of Hydro's buying involves the purchasing of major items of technical equipment, as well as huge quantities of basic materials, it was explained. "These must, of necessity, in most instances, come direct from the manufacturer or producer, regardless of where he is located," Mr. Saunders observed.

Concluding, he added: "The competi tive angle has to be carefully observed and is at all times a matter of record, but in cases where all contributing factors are equal, fair distribution of business is our aim and records are kept to ensure this condition."

Urges Immigration

Col. F. J. Lyle, O.B.E., Also Warns Professional Engineers Of "Uncertain Years Ahead" And Stresses "Moral And Spiritual Debt" To Britain — Addresses Annual Meeting.

by
C. G. W. MacIntosh
Hydro News

THERE is need for large-scale immigration in order to maintain the tremendous industrial expansion now taking place in Canada.

This opinion was emphatically expressed by Col. F. J. Lyle, O.B.E., when addressing approximately 500 members of the Association of Professional Engineers of Ontario at the annual meeting in the Royal York Hotel, Toronto, on January 29.

Col. Lyle, who is Director of the Trade and Industry Branch of the Ontario Department of Planning and Development, also warned his audience that dangerous and uncertain years were ahead.

In his address, entitled "Canada's Industrial Growth and the Resulting Trade Problems," the speaker also declared, "Even if it means real sacrifices on Canada's part, Canadians would be well advised to do everything possible to maintain trade with the United Kingdom."

In tracing the industrial growth of Canada to her present status as third largest trading nation in the world, Col. Lyle pointed out that this had been accomplished in the short space of 35 years.

"We have come to a definite parting of the ways," he continued. "By force of circumstance we have been obliged to turn away to some extent from our traditional British connections and are looking to our great friend and neighbour to the South for our economic security."

In noting the possible dangers in the years ahead, the speaker said: "Canadians should not forget, however, their proud place and their obligations as members of the second strongest unit in the British Commonwealth, and which in time will become the strongest.

"There lies our first duty," he insisted. "That duty is above dollars and cents; it is a moral and spiritual debt of long standing. Even if it means real sacrifices on our part, more loans, more credits, we are well advised to keep the traffic of goods going east and west as well as north and south. We are well advised from our plenty to assist the United Kingdom all the way back to her former economic security and military strength."

As an indication of how the life of Canada has changed under the impact of two wars, Col. Lyle said that in 1914 that 43 percent of net production came from agriculture and only 35 percent from manufacturing. Last year, the picture was more than reversed and agriculture provided only 19 percent of net production whereas manufacturing took care of 65 percent.

A unique display of oil paintings, watercolors, pastels and sketches executed by members of the Association, including H. H. Leeming of the Commission staff, received much attention and very favorable comments from the large number of engineers present at the meeting.

At the annual meeting of the association, following the luncheon, the election of the following officers was announced:

President, W. J. W. Reid, Hamilton; 1st Vice-President, E. V. Buchanan, London; 2nd Vice-President, W. H. M. Laughlin, Toronto; Immediate Past President, G. L. Macpherson, Sarnia;

Civil Branch Councillors, H. E. Barnett, Niagara Falls; J. L. Lang, Sault Ste. Marie; W. L. Sagar, Toronto;

Chemical and Metallurgical Branch, A. N. Conklin, Welland; R. M. P. Hamilton, Toronto; O. D. Johnston, Toronto;

Electrical Branch, G. A. Caldwell, Toronto; W. J. Gilson, Toronto; W. E. Ross, Toronto;

Mechanical Branch, D. C. Billings, Toronto; O. W. Ellis, Toronto; G. Ross Lord, Toronto;

Mining Branch, W. R. Askwith, Toronto; E. A. Collins, Sudbury, G. G. W. MacLeod, Sault Ste. Marie.

"DREAMED UP" MACHINE

(Continued from page 8)

about his invention in a piece-meal fashion only after a series of questions pried out the answers.

He revealed that he first thought about the wavy cutter three years ago and did much of the work on the machine when he could spare time from his regular duties as supervisor of the Queenston machine shop. Pieces of scrap metal and other "junk" that had been discarded as worthless were hoarded carefully by Mr. Ewart for his automatic wavy machine.

From the start it was not an easy task that the inventor had set for himself. Having no previous model to guide him, Mr. Ewart experimented time after time with unsatisfactory results. Finally after much revising and changing, he came up with a machine that is a marvel of efficiency.

In cutting wavys, the machine, which is operated by an oil pump at 65 lbs. pressure, is controlled by twelve hydraulic valves. The wavys are cut by a little punch, like a sewing machine, an eighth of an inch in diameter. This punch moves rapidly, travelling at 1,500 strokes per minute, and is regulated by a master wavy. Press board is cut up to a quarter inch thick in the operation.

Although it was placed in service last year, little has been known about the wavy cutter outside the Queenston plant. But it is this machine that today is cutting virtually all the insulation for the maintenance of transformers throughout the entire Hydro system. And the job is being done more efficiently, with a far greater output in production than ever before and with virtual elimination of waste in material.

Use of Electricity Increasing

Every 10 years since 1919, the use of electricity has doubled in Canada. This observation was made recently by H. M. Turner, President of Canadian General Electric Company Limited. Mr. Turner's statement is backed up by facts. In 1900, Canada was primarily agricultural, with a total waterpower installation of about 173,000 horsepower. By 1920 it had increased to 2,515,000 and in 1948 stood at over 10,890,000 horsepower, with increases expected in 1949 and in successive years.

Although this trend may not be maintained indefinitely, it is likely to continue for at least the next decade, Mr. Turner predicted. The increasing demand must be met by corresponding development of facilities for power production, to keep Canada's standard of living one of the world's highest, he stated.

From coast to coast great expansion is in full swing to provide power to serve the peacetime industries which have sprung up since the war. Many factors have made it difficult to keep pace with today's steadily rising demand for power, among them the slackening of the rate of power development in the pre-war years, the lack of men and materials during the war, the generally held belief that the closing of war plants would release sufficient power for requirements, and the length of time required for construction of a major power development.

Most hydro-electric sites within economical transmission distances of our urban centres have been either developed or projected, according to Mr. Turner. He believes that the time will come when sources of electric power other than hydraulic will be required not only for peak periods but for base loads as well.



SEATED FROM left to right are: G. W. MacLeod, Algoma Steel Company; O. W. Titus, Canada Wire and Cable Co.; Fred Mayberry, Canadian National Exhibition, and J. M. Walker, Marani and Morris. Standing left to right, are, Donald R. E. Barnaby, Canadian Line Materials; Ewart M. Haacke, Editor, Electrical News and Engineering, and W. G. Mayberry, Canadian Allis-Chalmers.



A THOUGHT-PROVOKING address was delivered at the luncheon preceding the annual meeting by the guest speaker, Lt.-Col. F. J. Lyle, O.B.E., Director of the Trade and Industry Branch, Ontario Department of Planning and Development. Col. Lyle, also an engineer by profession, spoke on the subject "Canada's Industrial Growth and the Resulting Trade Problems."



THE 1949 OFFICERS of the Association of Professional Engineers of Ontario are shown in this picture. From left to right, they are: W. H. M. Laughlin, of Toronto, Second Vice-President; E. V. Buchanan, of London, First Vice-President; W. J. W. Reid, of Hamilton, President, and G. L. Macpherson, of Sarnia, immediate Past President.



A SPLENDID exhibit of sketches and paintings by members of the Association of Professional Engineers was greatly admired and brought many favourable comments from the large number of engineers present at the annual meeting. In this picture looking at a painting of a wheat field by H. H. Leeming, Ontario Hydro's Director of Frequency Conversion, are W. E. Ross and W. J. Gilson, left, and R. C. Poulter, right, Editor of the Professional Engineer, official publication of the association.



IN THIS picture, Mr. Leeming is seen standing beside one of his paintings, "The Nipigon River," with other members of the association who are admiring the work and who extended congratulations to him on the excellence of this painting. At the extreme left with Mr. Leeming is Col. T. M. Medland, Executive Director of the Association of Professional Engineers, and at the right, Fred Collins, Dr. G. R. Lord and W. E. Ross.

Record Registration Predicted

Joint Annual Convention of A.M.E.U. — O.M.E.A. Will Be Held in Toronto Feb. 28, March 1 and 2 — Heavy Agenda Faces Delegates

PLANS have been completed for the forthcoming annual conventions of the Association of Municipal Electrical Utilities and of the Ontario Municipal Electric Association which will be held at the Royal York Hotel in Toronto on February 28, March 1 and 2.

The announced convention programs are as follows:

A.M.E.U. PROGRAM

Monday, February 28

10.00 a.m—6.00 p.m.—Registration (Convention Floor).

12.00 noon—Executive Luncheon (Private Dining Room 10).

2.00 p.m.—Balloting for Officers Closes.

2.15 p.m.—CONVENTION SESSION (Banquet Hall); President's Address; Paper by G. M. McHenry, H.E.P.C., Subject: "Service Voltage Standardization and Control."

5.00 p.m. — 6.00 p.m.—Entertainment (Roof Gardens).

6.00 p.m.—Executive Dinner with Officers of O.M.E.A. (Tudor Room).

9.00 p.m. — 11.30 p.m. — Entertainment (Roof Gardens).

Tuesday, March 1

9.00 a.m. — Registration (Convention Floor).

9.30 a.m. — JOINT SESSION with O.M.E.A. (Banquet Hall); Addresses by Members and Officers of The Hydro-Electric Power Commission of Ontario.

11.45 a.m.—Announcement of Officers for 1949.

12.00 noon—12.30 p.m. — Entertainment (Roof Gardens).

12.30 p.m.—JOINT LUNCHEON with O.M.E.A. (Concert Hall); Civic Greetings—Mayor Hiram E. McCallum; Speaker: Rev. Norman Rawson, Centenary United Church, Hamilton; Subject: "You Can't Go Home Again".

2.30 p.m. — Panel I. CITY GROUP (Banquet Hall); V. A. McKillop, Chairman.
Paper by R. J. Vanhorn, Subject: "One Phase of Public Relations"; Paper by W. F. Sutherland, Subject: "Some Points on Personnel Management in The Utility Business."
Panel II. TOWN GROUP (Room D); A. E. Fort, Chairman.
Paper by W. E. Swartz, Preston, Subject: "Transformer and Meter Records"; Paper by F. A. Washburn, Ingersoll, Subject: "Tools, Equipment and Their Records"; Paper by W. D. Stalker, Simcoe, Subject: "Public Relations With Outside and Inside Men"; Discussion, A. W. Bromley, Kitchener, Topic: "Changing Street Lighting From Series to Multiple."
Panel III. ACCOUNTING AND OFFICE ADMINISTRATION (Room C); M. W. Rogers, Chairman; George Appleton, Toronto, Program Chairman.
Paper by Don Carlisle, Goodyear, Subject: "Stimulating Employee Good Will"; Paper by R. H. Becker, Kitchener, Subject: "Work Order Accounting"; Paper by M. J. McHenry, H.E.P.C., Subject: "Relationship of Regional Offices to Municipalities;" Paper by W. McCreight, Robinson Converters, Subject: "The Change from D.C. to A.C. in Northern Ireland."

5.30 p.m. — 6.30 p.m. — Entertainment (Roof Gardens).

6.45 p.m. — JOINT DINNER with O.M.E.A. (Concert Hall); The Harvey Perrin Choir; Speaker: John Diefenbaker, M.P.; Music and Floor Show.

9.30 p.m. — 11.30 p.m. — Entertainment (Roof Gardens).

Wednesday, March 2

9.30 a.m. — 12.00 noon — Registration (Convention Floor).

10.00—10.45 a.m. — BUSINESS SESSION (Banquet Hall), Report of Secretary - Treasurer; Constitution Amendments—J. C. Keith. Introduction of 1949 Executive.

10.45 a.m. — Paper by H. H. Leeming, H.E.P.C., Subject: "Aspects of Frequency Conversion."

12.00 noon—12.30 p.m. — Entertainment (Roof Gardens).

12.30 p.m. — LUNCHEON with The Electric Club (Concert Hall); Speaker: P. D. McTaggart-Cowan, Assistant Controller, Air Services, Meteorological Division, Department of Transport, Subject: "Meteorology Today."

2.00 p.m.—ADJOURNMENT.

O.M.E.A. PROGRAM

Monday, February 28

10.00 a.m. — 6 p.m. — Registration (Convention Floor).

9.00 p.m — 11.30 p.m. — Registration (Roof Garden).

10.00 a.m. — O.M.E.A. Executive Committee Meeting (Private Dining Room No. 8).

12.30 p.m.—O.M.E.A. Executive Committee Luncheon (Private Dining Room No. 7).

2.15 p.m.—O.M.E.A. General Meeting (Concert Hall) President's Address; Minutes; Naming of Committees; Treasurer's Report and Report of Finance Committee; Reading of Resolutions and Committee Reports.

5.00 p.m. — 6.00 p.m. Entertainment (Roof Garden).

6.00 p.m. — Joint Executive Dinner (O.M.E.A. — A.M.E.U.) (Tudor Room).

9.00 p.m. — 11.30 p.m. — Entertainment (Roof Garden).

Tuesday, March 1

9.00 a.m. — Registration (Convention Floor).

9.30 a.m. — Joint Session (O.M.E.A.-A.M.E.U.) (Banquet Hall); Addresses by Officers of the Hydro Electric Power Commission of Ontario.

12.00 noon — 12.30 p.m. — Entertainment (Roof Garden).

12.30 p.m. — JOINT LUNCHEON (O.M.E.A. - A.M.E.U.) (Concert Hall) Civic Greetings, Mayor McCallum, Toronto; Speaker: Rev. Norman Rawson, Hamilton.

2.30 p.m. — O.M.E.A. General Meeting (Ballroom), Committee Reports.

5.30 p.m. — 6.30 p.m. — Entertainment (Roof Garden).

6.45 p.m.—JOINT DINNER (O.M.E.A. -A.M.E.U.), (Concert Hall), Speaker, John Diefenbaker, M.P.; Music and Floor Show.

9.30 p.m. — 11.30 p.m. — Entertainment (Roof Garden).

Wednesday, March 2

9.00 a.m. — Registration (Convention Floor).

9.30 a.m. — O.M.E.A. General Meeting (Ballroom) Election of District Officers and Directors, Election of Officers, District Reports, Unfinished Business, New Business.

12.00 noon — 12.30 p.m. — Entertainment (Roof Garden).

12.30 p.m. — JOINT LUNCHEON (O.M.E.A.—A.M.E.U. and Electric Club of Toronto, (Concert Hall), Speaker: P. D. McTaggart-Cowan.

2.30 p.m. — O.M.E.A. General Meeting (Ballroom) Unfinished Business, New Business.

O.M.E.A. 1949 Executive Committee will meet immediately following the close of the afternoon session in Parlour C.

Prepare To Meet Growing Demands

Steam And Diesel Units Being Secured, A. W. Manby Tells Districts 7 and 8 O.M.E.A. Delegates.

by
Grace J. Carter
News Editor

Steam and diesel plants with a total capacity of between 60,000 and 70,000 kilowatts are being secured by the Commission to meet increased power demands anticipated late this year and during 1950.

This announcement was made by A. W. Manby, Assistant General Manager, Administration, when speaking at a meeting of Districts 7 and 8 O.M.E.A. at St. Thomas on February 3.

He said that four of the nine 5,000-kilowatt steam units, which were being obtained, would be installed at Scarborough; three at Thorold and the other two in the Hamilton area. In addition, he said, they had secured a 6,000-kilowatt unit which would be installed in Hamilton and they had already installed two 1,000-kilowatt diesels. These units, Mr. Manby said, should serve a two-fold purpose in supplying electricity above the basic needs for peak consumption periods and they would also be a source of 60-cycle power supply during the conversion period.

Mr. Manby spoke briefly on the part the O.M.E.A. could play in Hydro affairs. The Commission, he pointed out, was necessarily responsible for the administration of the day-to-day affairs of Hydro but it was always happy to place before the O.M.E.A. the problems with which it was confronted with a view to obtaining the Association's reaction and views. He assured them that those views were very carefully considered.

Commission Chairman Robert H. Saunders, in his brief address to the delegates, noted the tremendous expansion taking place in rural Ontario, and the progress made by Hydro in meeting increasing demands for rural service. Last year, he stated, approximately 30,000 rural customers had been added, and this year it was expected there would be approximately 39,000 new rural consumers. The total number of rural installations to date, he said, was approximately 220,000 consisting of 90,000 farms and 130,000 non-farms. "When the 1949 program has been completed," he continued, "this number will be increased to approximately 259,000 consisting of 106,000 farms and 153,000 non-farms."

W. Ross Strike, K.C., Second Vice-Chairman of the H.E.P.C., said that he had been astounded to note that in the last three years the Commission's administration and technical staff had increased five times or to a total of 8,500. The construction personnel, Mr. Strike said, had increased twelve times, or to approximately 12,000.

Mr. Strike also made reference to the long hours that the Commission's staff had worked and pointed out that the municipalities, too, had done a magnificent job. What had been done, he said, in the last two or three months showed what could be accomplished when everyone was prepared to co-operate.

Guest speaker of the meeting, H. H. Leeming, Director of Conversion, H.E.P.C., told the delegates that the change-over of the Southern Ontario System from 25- to 60-cycle frequency had already been started and constituted the largest long-term project yet undertaken by the Commission.

He reviewed what had been done by the frequency change-over committee of the O.M.E.A.-A.M.E.U. and said he wanted to publicly thank the officials of The Hydro-Electric Power Commission of Ontario for their assistance in establishing rules and regulations and in helping him secure personnel.

Mr. Leeming stated that the conversion of domestic equipment was being handled by the Comstock Company under the supervision of Commission engineers. Surveys, he said, were already being carried out in Scarborough, Sarnia, London and part of Hamilton.

A well-organized question-and-answer period, under the chairmanship of A. W. Manby, was conducted during the afternoon session. Many of these questions dealt with the frequency conversion.

Officers elected for the ensuing year for both districts are as follows: District No. 7, President, P. R. Locke, St. Thomas; Directors: R. W. D. Lewis, London; and H. R. Henderson, Woodstock.

District No. 8, President, W. P. Bolton, Windsor; Vice-President, T. A. Cada, St. Clair Beach; Directors: G. H. Fuller, Windsor; T. C. Scott, Tecumseh; L. Sylvester, Belle River, Secretary-Treasurer, J. Clark Keith, Windsor; Auditors: Robert Fenner, Riverside; and A. H. Stevenson, Amherstburg.

Classified Ads

As a service to Hydro municipalities and Hydro municipal personnel, Hydro News is inaugurating a Classified Advertising column. This is being done in order to provide a convenient liaison between widely separated Hydro communities throughout the province.

Designed primarily to facilitate exchange or sale of various items of Hydro equipment, this department will also include approved advertisements from Hydro municipal personnel directing attention to specific requirements.

Each advertisement should be restricted to 25 words and be typed on office stationery, with the name and position of the advertiser clearly indicated.

All advertisements submitted will be subject to approval of Hydro News and must include address of advertiser for purposes of reply. Hydro News will not issue any box numbers nor be held responsible for any negotiations in connection with any advertisement.

At present the following classifications will be featured:

Articles For Sale, Articles Wanted, Accommodation Available, Accommodation Wanted, Services Available, Services Wanted, Swaps, Personal.

ARTICLES FOR SALE

THREE 75-KVA 2300/575 volts, 25-cycle Packard transformers, four years, available about May 1, 1949. Apply Aylmer P.U.C. —Mr. S. R. McBrien, Manager.

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LATE FRANK SPRINGER

With the passing of Frank Springer on December 11, 1948, the Welland Hydro-Electric Commission lost its Chairman and the city of Welland one of its most prominent citizens.

Mr. Springer, who was in his 75th year, took an active part in municipal affairs, having been a member of the School Board, the City Council, and the Hydro Commission. In 1933, 1934, and 1935 he was Mayor of Welland.

Born in Humberstone Township on May 22, 1874, he came to Welland at the age of 16, and was apprenticed with the J. E. Cutler Lumber Company, of which he later became superintendent.

He was a staunch Liberal in politics, and had filled the offices of President and Secretary of the Welland City Liberal Association. He was a member of Merritt Masonic Lodge and Companion of Willson Chapter, R.A.M.

The late Mr. Springer is survived by his widow, the former Amelia Dohn, a daughter, Mrs. L. L. Ector (Helen), a half-brother, Abram Bearss, and a half-sister, Miss Sarah Bearss.

O.M.E.A.—Dist
Meet at



NEWLY ELECTED officers of District No. 8 are, from left to right: Thomas C. Scott, Tecumseh; G. H. Fuller, J. Clark Keith, W. P. Bolton (President), Windsor; T. A. Cada, St. Clair Beach.

EQUENCY CONVERSION was the subject
der discussion when the Hydro News' pho-
grapher focused on this group, comprising
. B. Curtis, Aylmer; H. H. Leeming, Director
f Conversion, H.E.P.C.; and Adam Smith,
onsumer Service Engineer, Western Region.





ANOTHER DISTINGISHED group of delegates, from left to right are: W. H. Lockwood, Comber; Alex. Bowman, David Irving and W. B. Ford of Blenheim.

IILE THE photographer was making his
nds, he paused to line up the gentlemen
wn here: front row, left to right, G. F.
cheson, President, O.M.E.A., Huntsville; G.
Laing, St. Thomas. Back row: W. R. Mathie-
, Secretary-Treasurer, A.M.E.U.; G. H. Fuller,
ndsor; P. R. Locke, St. Thomas; W. Ross
ke, K.C., Second Vice-Chairman, H.E.P.C.



s 7 and 8
Thomas



NEWLY ELECTED officers for District No. 7: H. R. Henderson (left), Woodstock; P. R. Locke (President), St. Thomas; and R. W. B. Lewis, London.



WAITING FOR the lunch bell to ring are R. A. Parker (left), Watford; F. A. Fitzgerald, Petrolia; and W. B. Ford, Blenheim.



MANY SUBJECTS are aired at district meetings and this trio comprising C. E. Hodgson (left), Western Regional office; G. L. Mistele, Sodney; and Alex. Bowman, Blenheim are evidently discussing a knotty problem.



THIS ILLUSTRATION shows a few of the delegates registering before the morning session.





I. CLARK KEITH, Windsor, G. F. Hutcheson, Huntsville; W. F. Craig and J. R. Sullivan, Woodstock; have a little "chin fest" just prior to the afternoon session.



by DR. R.W.I. URQUHART MEDICAL DIRECTOR

EXERCISE

Someone remarked to me the other day in my office that he had the impression that I was very keen on exercise. Someone else on another occasion was unkind enough to suggest that it was primarily exercise for the other fellow that I was interested in. While I cannot entirely accept the latter statement I must admit that I believe that proper exercise graded to the needs and condition of the individual is a very real factor in the attainment and maintenance of good health. It might be well to elaborate a little on the reasons for this belief.

The human body is a very complicated structure. It is composed of a great variety of tissues, each kind of tissue having a very specialized function. The bones, for example, are rigid tissues giving form and support to the body. They are joined together by firm tough tissues known as ligaments. Tissues capable of contraction and known as muscles are attached to the bones in such a way as to make movement possible. Other specialized tissues have to do with breathing, with the digestion and absorption of food, etc. Every necessary function of the body is accomplished by a tissue specially adapted for its particular purpose.

Tissues are composed of countless numbers of individual cells, the kind of cell being peculiar to and suitable for the particular job that the tissue has to perform. Each cell of the body must be supplied with nourishment to keep it alive as well as a means to get rid of its waste products. This is accomplished by the circulation of the blood through the blood vessels — the arteries, veins and the finer extensions of these which come in contact with even the most remote cells of the body. The blood carries to the cell the oxygen and food necessary for growth and repair and carries away the end products of cell activity.

Blood Is Circulated

The blood is circulated through these vessels by the pumping of the heart. The walls of the heart are composed of very thick and strong muscle tissue. It has a great deal of work to do, for the amount of blood to be circulated is about one-sixteenth of the weight of the body. A man of 160 pounds therefore has about 10 pounds of blood in his body, and all of this blood is sent around the body in about one and one-quarter minutes. The amount of work that this entails would be sufficient to lift an individual to about three times the height of the Hydro building in Toronto. The work of the heart goes on day after day without us actually being conscious of it.

Other muscles of the body are also working almost constantly even though the individual may seem to be at rest. Some of these muscles are those concerned with breathing, for breathing is the result of periodic muscular activity. Others are those concerned with posture such as the muscles of the back and legs in sitting and standing. Some muscles are kept in a state of mild tension or tone and thus maintain the position of the body. Still others are concerned with digestion, food being constantly moved along within the intestine by muscular contractions.

All of these activities require food and oxygen for their proper performance. The amounts necessary can be calculated and indeed have been measured. The requirement of an individual at rest is known as the basal energy requirement or basal metabolism. The requirement depends on the age and sex of the individual. When the factors of height and weight are taken into consideration, the requirement is fairly constant for a given age and sex.

Basal Requirement Increased

The basal requirement is markedly increased when voluntary activity is undertaken. The requirement for persons in various occupations can be calculated and in fact have been measured experimentally in a great number of them. Obviously the greater the physical activity the greater the energy requirement. Muscle activity accounts for the greater part of the increased demand. This demand must be met by the delivery of food and oxygen to the individual cell and the rapid removal of the waste products of increased cell activity.

Increase in muscle activity therefore requires an increase in the circulation of the blood to all parts of the body. This increases the work of the heart. Normally the heart is well able to take care of this increase and the individual is not conscious of any excessive strain. The individual who is out of condition or has a heart damaged by disease, or the wear and tear of the years may experience some difficulty. He becomes conscious of palpitation and shortness of breath with exercise only moderately beyond his usual habit.

The first and perhaps the greatest value of physical exercise is therefore to keep the heart muscle in good condition. The heart muscle itself needs food and oxygen, and moderate exercise stimulates it to supply itself with these necessities. Everyone is aware of the need for training for those who engage in competitive sport. A large part of such training is really conditioning. All the muscles of the body, including the heart, gradually become stronger and accustomed to responding to the demands of increased activity. While it is not expected that everyone could or should keep himself in the physical condition of an active athlete, it should be possible for one to keep himself in such a condition that moderate increase in physical activity could be accomplished without discomfort.

Physical Exercise Necessary

Physical exercise is also necessary for the well-being of the skeletal muscles. As mentioned above, muscle cell activity produces certain waste products which must be got rid of. The increased circulation which accompanies exercise helps in this process. Occasionally, particularly if an individual is out of condition, he finds that his muscles become stiff and sore after exercise.

Members Of All-Important Team

Roles Of Various Branches Of Commission Reviewed At Two-Day Conference Of Regional And Area Managers

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Hydro is a team made up of highly efficient and smoothly operating Divisions, Departments and Sections whose personnel, individually and collectively, make all-important contributions to the maintenance of Hydro service every hour of every day and every day of every year. Through this closely co-ordinated teamplay, Hydro is in a position to make a vital contribution to the onward march of progress in Ontario and to the welfare of all people who work and dwell in this province.

These facts were pointed up by key Commission personnel who spoke at the recent two-day conference of Hydro's Regional and Area Managers in Toronto.

In addressing himself to the gathering following the dinner meeting, Chairman Robert H. Saunders made it clear that he was not indulging in platitudes when he said that he knew of no group who worked harder or more efficiently than those who served Hydro, not only at the head office but in the field. He also spoke of the conscientious service which is being rendered by the personnel of local Hydro municipalities.

Most Important Job

"I believe," declared Mr. Saunders, "that we who are associated with Hydro can feel extremely proud of our association. We have a job to do. It is without question the most important job in this province. There is no single feature of our life in Ontario that even compares with the development of Hydro."

The Chairman also had something to say about "the very fine work" of the staff during the recent critical power shortage and he took time out to say "a warm and sincere thank you" to all Hydro consumers, including housewives and farmers, for the way in which they had assisted the Commission in helping save power while he also paid high tribute to both labour and industry for the "most helpful and significant" contribution made to the conservation program by rearranging work schedules.

In discussing the critical period of the power shortage last fall, Mr. Saunders directed attention to the serious situation created by the drought—a condition which had been in evidence in other parts of Canada, the United States and in many other countries—and he pointed to the improvement in the Ontario power supply situation when rain had finally fallen "in the right places."

Speakers taking part in the two-day conference packed considerable "meat" into their addresses with H. D. Rothwell, Administrative Assistant, Regions, who presided, keynoting the objective of the sessions. He emphasized the importance of all members of the Hydro family, and of the Regional and Area Managers, in particular, having a full appreciation of the work which was being done by the various Divisions, Departments and Sections. He told his audience, in effect, that they were a part of an all-important team doing an all-important job for Hydro and for the people of Ontario.

J. M. Hambley, Director of Operations, who introduced the speakers from his staff, spoke briefly, pointing out that the men in the line division were responsible for doing the actual work, while the members of the head office staff had to see that the standards were maintained.

In his address on line maintenance Thomas J. Burgess, Line Maintenance Engineer, stated that while insulators had been improved, they had to be tested periodically. Mr. Burgess mentioned the problems facing Hydro in industrial areas where insulators, which became contaminated, had to be taken down and washed with muriatic acid. This was especially true, he said, in the Hamilton area.

Backlog From War Years

Mr. Burgess pointed out that considerable maintenance work had had to be done on distribution lines largely because of the backlog from the war years when materials and labour were enlisted in the fight for victory.

He also told his audience that Hydro was now considering trying to combine two systems of maintenance tools. He mentioned that it had been proposed to have a course at the Commission's training centre for the benefit of rural linemen.

The work of the forestry division was discussed by William M. Grundy, Assistant Chief Forester, who stated that in 1946 there were 30,000 miles of lines in operation, requiring 2,680,000 man-hours of work by men of the forestry section to keep the lines clear. It was important, he stated, that linemen engaged in forestry work should have adequate training to perform the work safely and in a manner which would promote good public relations.

He pointed out that the Commission was endeavouring, in every way, to improve the training of the forestry staff. As a result, Hydro has given special supervisory instruction to foremen, subforemen and others. The speaker also announced that Hydro planned to train about 120 new men a year at the Etobicoke training centre.

Maintenance of trucks was the subject of an informative and interesting address by Frank Mills, Superintendent of Production and Service. He stated that common sense was required in using trucks and added that a truck was one of the most important "tools" Hydro possessed. The speaker also pointed out that without trucks Hydro service would be seriously impaired because there would be no way of maintaining repairs to lines or hauling supplies to new projects and developments.

Gives Valuable Advice

Mr. Mills gave some valuable advice in proper care of trucks, stressing that regular greasing of trucks was most important. He stated that frequent starting and stopping of engines was harmful, especially in winter weather. He said that engines should be kept warm and during the winter should be allowed to warm up properly.

"If more gas is used than usual by letting a truck engine warm up properly, this is more than off-set by the saving in repair bills. This is the answer to any criticism about wasting gas. Not only are engine repair bills kept down but there is less loss of the truck's services through being laid up for repairs," Mr. Mills stated.

Bad practices, which he deplored, were overloading of trucks and "riding" the clutch pedal when driving. He warned that overloading not only was harmful to the body and engine of the truck but extremely injurious to the tires. "Clutch pedal riding," he said, "causes clutch slipping and tying up a truck for repairs."

D. A. McKenzie, Meter and Relay Engineer, spoke briefly about the work of the meter and relay division. He stated that the actual problems had to be met in the field and praised the valuable help received from the laboratory.

David Forgan, Director of Construction, introduced members of his staff who delivered brief, interesting addresses.

Thorough planning was one of the most important features of any construction job, Harvey Self, Construction Works Engineer, declared. He emphasized that mistakes could not be made by construction engineers when they set out to undertake a big project. The speaker outlined

POWER SHORTAGE IN B.C.

Industrial power consumption has been slashed 33 per cent in British Columbia during recent weeks, reports from that province reveal. The cut is expected to reduce the wages of 75,000 workers in British Columbia's lower mainland. A. E. Grauer, President of the B.C. Electric Company, announced sweeping power restrictions, affecting stores, offices, theatres and possibly transportation. At the time of writing, only 18 days' water remained in vital reservoirs, after a 52-day drought and a 39-day freeze.

e detailed steps of careful planning that ıd to be taken by construction engineers ıgaged on a big job such as the Des ɔachims project. He gave interesting cts and figures on this construction job, ıd outlined some of the preliminary ork, prior to the actual starting, such as ilway sidings, adequate camps to house ıe workers and many other necessities.

Salvage Operations

The extensive salvage operations conucted by Hydro were discussed in an ıformative talk by Bob Lightbody, Mateals Supervisor. He said that the salage section had been established in 1938 ıd all salvage work and sales had thus een centralized. As a result, better rices were realized by the Commission ɔr salvage material, representing an inease of about 15 percent in the amount erived from salvage sales. The speaker ave detailed information on the thorough ay salvage work was being carried out.

Dr. Otto Holden, Hydro's Assistant General Manager, Engineering, gave a ɔmprehensive outline of the general oranization of the Engineering Departıent, and told the Regional and Area Managers: "Your men are the Commision's intimate contact with the public. ou can do much to help build good elations. Your co-operation is vitally eeded."

An informative address was given by . H. Banks, the Commission's Comproller, on the subjects: "Stores — Stockeeping and Accounting;" "Centralized Billing;" and "Uniform System of Acounting."

H. D. Rothwell, Administrative Assistant, Regions, during the sessions, inroduced T. A. Scott, Area Manager, Hamilton Region; C. D. MacDonald, Area Manager, Kitchener; M. D. Kaye, Area Manager, Matheson Area, and B. DuBoise, Area Manager, Penetanguihene, who all spoke briefly.

Speaking at the opening of the Conention, A. W. Manby, Assistant Genral Manager, Administration, told the lelegates that there was little likelihood ɔf further power cut-offs being necessary his winter. However, the importance of ontinued voluntary conservation, could ıot be over-emphasized, he added.

Commission Projects

A brief description of the Commission's engineering projects under construction was given by J. R. Montague, Director ɔf Engineering. It was pointed out that the present expansion program would add approximately 1,045,000 kilowatts (1,400,000 hp) of installed generating capacity, together with the related transmission, transformation and distribution facilities, over the period of the next four years.

This impressive figure would be realized, said Mr. Montague, upon the completion of the three Ottawa River plants at Des Joachims, Chenaux and LaCave; developments in Northen Ontario, at Pine Portage on the Nipigon and Tunnel on the Mississagi; the steam plant at Windsor and another steam plant to be erected in the Toronto area. In addition, the delegates were told, it was expected that between 60,000 and 70,000 kilowatts (80,000 hp) would be derived from small, semi-packaged steam and Diesel units.

Following Mr. Montague, E. M. Wood, System Planning Engineer, outlined the work being undertaken in transmission and distribution, transformation and extension of rural lines. It was disclosed that the rural program called for construction of 3,800 miles of line and the connecting of 36,000 consumers.

Frequency Conversion Program

One session of the conference was devoted to the frequency conversion program with the speaker's rostrum being held by Harry H. Leeming, Director of Conversion. After detailing the progress already made in initiating the monumental job, Mr. Leeming spent the latter half of his allotted time in a question-and-answer session.

The importance of the proper attitude of Commission personnel towards the public was emphasized by W. Ross Strike, K.C., Second Vice-Chairman, in his address at luncheon.

"Hydro has a great responsibility to the people of this province," said Mr. Strike, "and while it is true we should see that the rules and regulations of the Commission are enforced, we should also use discretion in dealing with the public.

"We must remember that the public is made up of individuals who must be treated as such. Rules and regulations should be used as a shield rather than a sword," he added.

A long-range picture of Ontario was visualized by the Commission, Mr. Strike told the convention. Since Ontario had no oil or coal deposits, its entire economy was based on electrical energy, he stated. To this end, it was of vital importance that Hydro devise a durable system that would stand up under the most rigorous conditions.

Transmission Techniques

In the future, the speaker continued, improvements in transmission techniques, would make possible the utilization of remote water power sites. This, combined with a closely knit grid system, would link all Hydro facilities in the province, said Mr. Strike.

In speaking to the gathering on purchasing procedure for the Regions, H. W. Beck, Director of Supply, pointed out that the Division was now in a position to supply necessary materials promptly as required. Mr. Beck detailed the functions of the five departments within the Division: Supply Inspection, Supply Control, Purchasing, Stationery and Printing. In respect to the Printing Department, attention was drawn to the fact that it was now located in its new quarters in the Service Building on Murray Street.

Consumer Service Division

The role of the Consumer Service Division in the operations of the Regions and Areas was described by its Director, M. J. McHenry, who presided over a session in which each of the five department heads outlined the respective functions of their departments.

A definite lessening in the amount of correspondence being routed to Head Office, rather than to the regional office concerned, was noted by G. F. Drewry, Municipal Service Engineer. Other speakers were V. A. Beacock, Rural Service Engineer, I. K. Sitzer, Industrial Service Engineer, E. W. McLeod, Chief Electrical Inspector and J. A. Blay, Manager of Promotion, who directed attention to the production facilities within his department for the handling of public relations, advertising and other material utilized to interpret the all-important role of Hydro in the daily lives of the people of Ontario. Mr. Blay pointed out that publications, pamphlets, motion pictures and other publicity material were available, upon request, to the regional and area offices.

DROUGHT CUTS ELECTRICITY

Wide-spread drought in Europe has resulted in drastic cutting of power to industries. Power shortages, according to reports, are particularly acute in Spain, Italy, Switzerland, Southern Germany, France and Czechoslovakia, and it is feared that the drought may extend into the spring, affecting agricultural production in food-short areas.

Use of electricity has been drastically curtailed in Spain, where water reservoirs are less than 25 per cent full. A similar situation exists in Italy, where the drought is said to be the worst in 100 years. Power cuts will be two a week there, while industries will be limited to 65 per cent of the power used in September and October.

Re-elected Chairman

Wallaceburg's ex-mayor, Andrew L. Gilhuly, was re-elected Chairman of the local Hydro-Electric System at the recent inaugural meeting. In reviewing the work done in the past year, Manager Douglas Stewart reported that the new transformer station in the west end of Wallaceburg has been partially in use for several weeks and will be in full operation very soon.

"PLEASE EXCUSE the steely grip" might be the caption for the photo at right. Exchanging handclasps are B. H. Hankinson of Bothwell, left, and E. R. Adderman, St. Thomas. Lending moral support to Mr. Hankinson we have W. B. Ford, Blenheim, while at the right, Mr. Adderman is being seconded by Dalton Smith of Ingersoll.





THIS ATTENTIVE group in the foreground belo
are, left to right, A. L. Baltzer, Chatham, S. A
Moffat, Essex, L. J. Roy, Richmond Hill an
H. E. Chapman.

THE NORTHERN sect
the province is well
sented in the gath
shown on the left. Inc
in the group are:
Krull, Ear Falls; Phil
man, Toronto, H. Tid
Barrie, A. H. Wood,
wong and A. F. We
Fort Frances.



IT APPEARS that H. H. Leeming, Director of Frequency Conversion, is disseminating "the word" to this group of avid listeners including G. R. Webb, Plantagenet, H. D. Rothwell, Toronto and J. R. Claughton, Ottawa.



ANOTHER BETWEEN-sessions chat was s
our bustling photographer Burt Helling
"shot" this quartet comprising R. E. Hu
don; E. A. Hodgson, Ridgetown, H.
Lucan and H. H. Pegg, Windsor

Role of Research Division

Aims And Functions Outlined By W. P. Dobson At Regional And Area Managers' Conference.

SINCE its reorganization to undertake new and enlarged responsibilities, the Commission's Research Division is responsible for the scientific and engineering research activities; for the preparation and revision of general material specifications; and for the development and control of testing procedures to be used throughout the Commission.

In directing attention to these facts at the recent conference of Hydro Regional and Area Managers, in Toronto, W. P. Dobson, the Commission's Director of Research, pointed out that his Division was primarily a service organization providing specialized advice and assistance of a highly technical nature to the various Departments and Divisions of the Commission.

In general it was the aim of the Division to assist other Divisions and Departments in providing the best possible service to Hydro consumers, to help municipalities in any way within its power and to keep up to date on new developments and study their application to the Commission's operation.

Mr. Dobson explained that the Research Division had been divided into Departments and Sections. In carrying on research in the electrical field, the Electrical Research Departments, he stated, developed testing procedures and conducted specialized tests on electrical materials, instruments, equipment and appliances.

In the case of the Structural Research Department, Mr. Dobson said it developed testing procedures and conducted specialized tests on the physical and mechanical properties of materials and equipment used in construction and operation. It also investigated new materials to determine their value and possible application. At the same time, it tested purchased materials to determine their conformance with accepted specifications.

Mr. Dobson next discussed the work of the chemical Research Section which, he said, carried out research, developed testing procedures and conducted specialized tests on the chemical properties of materials used throughout the Commission.

Coming to the Concrete Control Section, he said it was responsible for quality control, inspection and testing of concrete used in construction, for conducting surveys to locate suitable aggregate for construction use; for liaison between field construction forces and the Research Division with respect to handling of concrete and related field problems.

All the Departments and Sections, Mr. Dobson stated, were concerned with the preparation of material specifications in their respective fields. These specifications after executive approval were used by the Supply Division in the purchase of materials.

He also pointed out that there was a natural division of work into testing and research. Testing problems, the Director of Research explained might be described as those requiring single or repetitive measurements or tests involving familiar procedures and equipment.

"This type of work," he continued, "may arise as a quality control measure in the acceptance of material and equipment or as a request of the person or department concerned. The Research Division is well equipped in both staff and apparatus to undertake practically all forms of testing as required in the Commission's varied fields of operation."

In directing attention to research work, Mr. Dobson said: "The fundamental aim has been to secure a continuance of interdivisional and interdepartmental co-operation and to place responsibility upon the department heads in the Research Division for the active prosecution of the various research projects."

£7,000,000 Hydro-Electric Scheme For Uganda



A £7,000,000 hydro-electric power scheme proposed for the harnessing of the Owen Falls in Uganda will have far-reaching effects on the economy of East Africa. Photo shows:—To afford easy access to the mid-stream island from which this picture was taken a stone causeway is being built from the West Bank. The river at this point is only between two and three feet deep.

This and That

MR. CHIPS: That title came to mind recently when we heard a most unusual story involving a salesman, the salesman's boss, the salesman's wife, a prominent sportsman and the gendarmes. It is interesting because it is largely true. It deviates only in a few details such as names because two of the people concerned are quite well known. We can say that it all happened in a big Ontario city. (Reminds us of the war-time reference to "An Eastern Canadian Port!")

Here's the yarn . . . and remember we're really not trying to pull the wool over anybody's eyes. One morning, Eddie, the salesman, was walking along a busy street minding his own business and trying to get more of other people's business to mind. He was suddenly buttonholed by an old friend, Joe, who had been prominent in sports circles but who was temporarily short of cash.

"Say, Eddie," said Joe. "I need five hundred bucks right away."

"Sorry, Joe, I don't have that much."

"All right, can you let me have $150?"

"Sure, Joe, but when do I get it back."

Joe laughed. "You'll have it back by 6.30 tonight. Meet me at the El Digesto Coffeecup."

"O.K.," said Eddie, writing out a cheque. "Say, just a minute, what are you going to do with the money?"

Joe looked around and whispered in Eddie's ear: "I'm backing a horse."

"Yeah?" Again Joe looked around. "I'm putting it on Puff Puff in the Second, and what's more give me thirty smackers to put on for you."

Eddie leaned against a lamppost, feeling weak. He knew his spouse had emphatic views about such things. He remembered the one and only time he had been at a race track and how he had backed "a hot tip" named Ducky Doo. The upshot had been that Ducky didn't and Eddie had lost $2 and the friendship of his wife for three weeks.

"Don't worry, Eddie," reassured Joe. "Give me another cheque for thirty bucks and you'll have it all back at 6.30 tonight."

Joe had a reputation for keeping his word and so Eddie relented but with considerable misgivings as to what he would say to his wife about Puff Puff.

That evening Eddie was waiting in the El Digesto Coffeecup. He was so nervous that he was stirring his coffee with a fork when Joe entered, promptly at 6.30, a broad grin on his face.

Joe huddled down into an alcove with Eddie. "Here you are, Eddie, there's your $150 back, also your $30 plus $1,500 . . . Puff Puff paid 50 to 1 . . . and there's a $500 bonus for loaning me the dough."

Eddie gulped and gaped at the bundle of bills in his hands and then he remembered he had to see his boss at the office at 7. Recovering his equilibrium with an effort and stuffing the bills into his pocket, he excused himself, hurried out and into a taxi. Arriving at his home, he kept the cab waiting while he bounded up the steps and impatiently thumped on the door. As his wife opened it, Eddie

by
The Editor

held a warning finger to his lips and whispered "Ask no questions now, honey, take this money and put it in a safe place. I'll explain later . . . got to go back to the office . . I'm late." With that, Eddie firmly pushed his wife inside, shut the door, and bounded back into the taxi.

"Honey" stared at the pile of money that had been thrust into her arms and then slumped in a faint. A few minutes later, she recovered, sat upon the floor and stared at the bills strewn all over the place. Then she jumped to her feet, bolted the door and windows, ran to the phone and called the police.

"This is Mrs. ————," she sobbed. "Did my husband hold up a bank?"

The desk sergeant on duty, a usually complacent, matter-of-fact fellow, jumped and started writing.

Meanwhile, Eddie, blissfully unaware of the dramatic turn of events, arrived at his office and stepped into the chief's room to find the boss on the point of nervous prostration and two stern-looking police officers and a plainclothesman in attendance.

"That's the man," said the boss quietly.

Eddie found himself sandwiched between the two officers.

"I never thought such a thing of you," muttered the boss. "I never thought that you, of all people, would do such a thing."

"Do what?" blurted Eddie.

"Hold up a bank."

"Me . . . hold up . . . a bank?"

"Yes, your wife said so and you left the loot with her."

"My wife . . . the loot . . . you're nuts," exclaimed Eddie.

Then the light bulbs started to flicker in his dazed mind. For a few seconds he laughed hysterically. Then he started muttering remarks about his wife . . . not the kind of tender endearing thoughts one would find on a lacy St. Valentine card.

"Well, come on, speak up," barked the sergeant.

"All right, all right, let Joe tell you."

Eddie scampered out to the car, closely followed by the officers and his boss. The police cruiser whined across town to **Joe's place.** On arriving Eddie didn't take time to knock. Joe's door was unlocked and so the party marched right into the living room. There was Joe smilingly peeling off twenty-dollar bills on the table.

"A nice haul, that, Eddie," smiled Joe, apparently quite unperturbed, "but why the social call and who are your friends?"

"You tell 'em," snarled Eddie.

"Tell 'em what?"

"About the money. They think I held up a bank."

Joe sat back in his chair and roared while Eddie's boss and the gendarmes started to fidget impatiently.

Finally the matter was cleared up to the mutual satisfaction of all concerned and Eddie had the police cruiser drive him home where he had a heart-to-heart talk with the spouse who finally promised never again to make premature calls to the police. Eddie, in turn, promised never to get mixed up with betting on horses.

It may be a matter of interest to record the fact that Eddie and his wife are today operating one of the most modern fish and chip emporiums to be found in this "big Ontario city." And so the title "Mr. Chips" seemed rather appropriate for this yarn . . . any way you take it.

District No. 4 O.M.E.A.

by
Grace J. Carter
News Editor

IF MUNICIPALITIES continue to receive the same measure of fine co-operation from all classes of Hydro consumers as at the present, there need be no more cut-offs this winter, Commission Chairman Robert H. Saunders stated at the annual meeting of District No. 4 Ontario Municipal Electric Association at the King Edward Hotel in Toronto on Friday, January 28.

He pointed out that with the mild weather and the increased rainfall in the right places there was a sufficient amount of water in storage to justify the belief that the present deliveries of power would be continued to the municipalities throughout the winter.

Looking at the construction picture in preparation for the present and future loads, the speaker stated that the citizens of Ontario should be proud of the men who were in charge of the local Hydro commissions and public utilities. At the same time, Mr. Saunders paid tribute to Richard L. Hearn, the Commission's General Manager and Chief Engineer; Dr. Otto Holden, Assistant General Manager, Engineering; and to A. W. Manby, Assistant General Manager, Administration, and other Commission personnel for the outstanding job they were doing. The Hydro Chairman reminded his audience that immediately following the war, the Commission had launched its postwar construction program. Just eight days after the Japanese surrender he stated, they had proceeded with the immediate construction of the second unit at the DeCew Falls plant near St. Catharines. That unit, the Chairman said, had been operating since September, 1947. In September, 1945, approximately 30 days after the surrender of Japan, the Commission, he continued, started construction of the Stewartville plant on the Madawaska River. That development, with a capacity of 60,000 kilowatts (80,000 hp) was now in service.

A. W. Manby, Assistant General Manager, Administration, in commenting on the functions of the O.M.E.A. said he felt the association had a very definite part in Hydro affairs and in shaping Hydro policy. He pointed out that the O.M.E.A could render a real service by bringing to the administration of Hydro the views of the municipalities that it represented.

Mr. Manby spoke briefly on the power situation and said that at the present time there was no thought of reverting to cut-offs during the present winter. He went on to say that the Commission had been fortunate in securing a number of small-sized steam units and diesel plants to assist in carrying any increases later this year and during 1950.

In discussing frequency conversion, H. H. Leeming, Director of Conversion, said that the project of changing over the Southern Ontario System to 60-cycle had already been started. This, he said, constituted the largest long-term project yet undertaken by the Commission. It involved a total estimated gross expenditure of $191,000,000 of which $170,400,000 would be met by the Commission and $20,600,000 by the municipalities. The estimated gross cost of conversion of consumer equipment alone was estimated at approximately $132,000,000. Most of the estimated total net expenditure of $100,250,000 will be obtained from reserves, he said. Mr. Leeming also pointed out that the time required to complete the conversion was given in the reports as 15 years, but by checking the growth in the 25-cycle loads as far as it was economically feasible, they hoped to complete the work in from 10 to 12 years.

Other speakers at this Toronto district meeting included John Collingwood Reade, Director of Public Relations, Conservation, Toronto Hydro-Electric System; and G. F. Hutcheson of Huntsville, President of the parent organization of the O.M.E.A.

During the afternoon session the following resolutions were passed along to the O.M.E.A. executive for consideration at the joint annual meeting which is to be held in Toronto on February 28, March 1 and 2:

RESOLVED THAT "a revision of our present rate structure be adopted for domestic consumers to discourage the excessive use and waste of kilowatt hours."

RESOLVED THAT "the continuance of daylight-saving would materially reduce consumption of electric energy and the Executive of O.M.E.A., District No. 4, regrets that The Hydro-Electric Power Commission of Ontario has discouraged this effective means of power conservation."

The following officers were re-elected for the ensuing year: President, Loftus H. Reid, Toronto; Vice-President, Arthur Leslie, Scarborough; Secretary-Treasurer, A. G. Jennings, East York; Directors: G. Pattison, Cooksville; W. P. Dale, Brampton; and G. F. Pownall, Mimico.

Better Human Relations

Regional And Area Managers Described By John Dibblee As "Most Significant Group In Hydro In Terms Of Personnel"

TODAY, the problem of human relationship is one that is bedevilling the world. . . . Better human relations, or how to get along with one another, is a basic problem which should be tackled through proper research in the same way as technological problems are being handled.

In making these observations at the recent conference of Regional and Area Managers in Toronto, John Dibblee, Manager of Personnel for the Commission, declared: "Every man needs the kind of treatment that makes him feel he is respected as a person and gives him a sense of 'belonging.' He needs a chance to exercise his skills and talents and do creative work as far as he is able. He needs a voice in determining conditions of work that affect him in his job. He needs to know that he is appreciated — that somebody cares. These needs are basic."

Continuing, Mr. Dibblee pointed out that the Regional and Area Managers constituted the most significant group in Hydro in terms of personnel work. "Personnel," he said, "is a line function. No group of professional advisers can fill your shoes. The fate of personnel lies in your hands."

The speaker pointed out that Hydro was in a fortunate position in the matter of human relations. "In the days of Sir Adam Beck," he remarked, there was tremendous enthusiasm. We must keep the spirit of those early days alive, and give the kind of leadership that will call up the best in everyone. This is no soft sentimental soporific; men are most happy when their best is expected and they are giving it. The importance of this is clear when we remember that Human Relations is the world's No. 1 problem today."

"Industry," he concluded, "holds the key. The issue is not wholly how the job we do affects the Hydro, though that is tremendously important in itself. It is a great deal bigger. What happens in Hydro can affect the country. We must strive to give leadership in human relations in Hydro that will be felt in industry at large, and affect the course of events in Canada, and even the whole world. That is a big responsibility and a big challenge. The stakes are high. Because they are high, the fight is the more interesting and worthwhile."





"UNDER THE swaying palms," these pensive gentlemen are probably discussing hypothetical southern trips. The illustration includes W. E. Whalen, Toronto; A. D. Norris, Mimico; Bert Merson, Toronto.



MUST HAVE been a good 'un, judging by the facial expressions of G. F. Hutcheson (left), Huntsville, President of the O.M.E.A.; E. M. Ashworth, General Manager, Toronto Hydro-Electric System; and M. J. McHenry, Director of Consumer Service Division, H.E.P.C.

OUR CANDID camera reports some of the delegates registering. John Collingwood Reade, Director of Public Relations, Conservation, Toronto Hydro-Electric System, is at the end of the line, and D. G. Moffat, Toronto Hydro, is doing the writing.

ALBERT G. JENNINGS, longtime Secretary-Treasurer of O.M.E.A. District No. 4, still talks about the one that got away at Fort Frances last September. The "skeptical" group around him include Cy. Johnston, Harry Foy and E. G. McCracken of Toronto.

THE PROVERBIAL barber shop quartette were coming through with one of the old favourites when the camera clicker happened along. Those identified are "Scotty" Hamilton, Forest Hill; Cy. Johnston, Toronto; H. A. Howard, Thorold; Sam Murchie, Brantford Twp.; and James Edmond, Mimico.





20,000 Years



THE FOUNDER of the Toronto Hydro Quarter Century Club, J. B. Kitchen, right, is seen in this picture with Walter Sellers examining one of the certificates presented to newly-admitted members of the club. Both men hold the proud record of being the oldest active employees of the Toronto Hydro system in point of service.

Certificates And Buttons Presented To 93 Members Of Toronto Hydro's Quarter Century Club—Total Membership Now 666.

by
C. G. W. Macintosh
Hydro News

TWENTY-FIVE years "young" in the service of the Toronto Hydro-Electric System—that is the proud record of 93 men and women who this month were received into membership in the Toronto System's Quarter Century Club.

And, indeed, many of those who were presented with the club's handsome certificate and button did not appear old enough to have given the quarter of a century of faithful service that their records indicated.

Presentations to the newest members of the Quarter Century Club were made at the organization's annual dinner and entertainment held in the concert hall at the Royal York Hotel. The function, the twenty-first in the history of the club, was attended by nearly 500 members, the Commissioners and General Manager of the Toronto Hydro, and Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario. Sam Smythe, the club's President, presided.

With the enrollment of the 93 new members, Toronto Hydro's Quarter Century Club now has a total membership of 666 men and women. The combined total of 2,325 years of service of this year's new members, added to that of the other veteran members' records, reveal that those enrolled in the club have given the impressive total of 20,763 years of service to the Toronto Hydro-Electric System.

Two members of the club hold the proud distinction of having served 40 years with the Commission. J. B. Kitchen, engineer in charge of stations, joined the Toronto Hydro in 1909 and is the founder of the Quarter Century Club. Walter Sellers, line foreman, is the other veteran active employee and club member.

Attending the function as guests were several pensioners of the Toronto Hydro. A feature of this year's meeting was the fact that fourteen ladies, who during the past twelve months have completed 25 years of service, were received into club membership. The Club now has on its rolls 39 ladies who hold honorary memberships.

Prior to the presentation of buttons and certificates to the new members of the Quarter Century Club, brief addresses of congratulation to the club officers and members were made by the distinguished visitors present.

Mayor Hiram E. McCallum, a Commissioner, told the gathering of veteran employees:

"I appreciate and also express the appreciation of all the citizens of Toronto for the splendid service you have rendered your city. You have given the kind of service that has made the Toronto Hydro an organization that is the envy of every public utility on the North American continent."

Chairman Robt. H. Saunders of the Ontario Hydro expressed his appreciation as head of the provincial commission for "the wonderful co-operation given by the local commissions." He paid warm tribute to the Toronto Hydro and to the members of the Quarter Century Club and declared: "It is a pleasure for me to be here as part of this Hydro family."

Loftus H. Reid, Chairman of the Toronto Hydro, spoke briefly congratulating the members of the club on their records of long, faithful service. Similar remarks were made by Commissioner Bert Merson and by E. M. Ashworth, General Manager and Chief Engineer of Toronto Hydro. Mr. Ashworth declared: "I join with the Commissioners in wishing you the best—increasing growth, wisdom and prosperity."

An enjoyable program of entertainment followed the addresses and presentations.

Scott Is Appointed To Regional Post

Appointment of Thomas A. Scott to the position of Consumer Service Superintendent at the West Central Regional Office in Hamilton, marks the termination of 25 years' service in the Dundas Area, of which he was Manager.

As a resident of Dundas, Mr. Scott entrenched himself firmly in the life of the town. Besides devoting himself untiringly to his Hydro duties, he has served as a Manager in Knox Presbyterian Church, as Vice-Chairman of the Citizens' Defence Committee, ARP, as a Director of the Osler Home, as President of the Electric Club of Hamilton, and on the advisory board of the Victorian Order of Nurses.

Tribute was paid to the former Area Manager in a Page 1 editorial in the Dundas Star of January 26. The article lauded his "faithful service, his kindly philosophy, his sense of humour, his friendliness and the very obvious fact that at all times, he was a Christian gentleman," and wished him well in his new position.

Mr. Scott took over his new duties on November 4th of last year.

ıblic Service





ALL THE talent for entertaining the members of Toronto Hydro's Quarter Century Club at their annual banquet this month was not vested exclusively with the hired performers. Above, a group of choristers from the garage section entertain their fellow club members. Choir members left to right in the rear: Albert Bilbrough, David Linklater, Peter Ferraro, Thomas Johnstone, Harry Blears, and Alex Smith. In the foreground, left to right, W. Roy West, Robert W. Hibbert and Sydney Day.

■

OFFICERS OF the club for the past year are left to right, John Johnston, Vice-President; Samuel Smythe, President; Eric Armstrong, Treasurer; and Oscar V. Anderson, Secretary.



ONE OF the high spots in the entertainment program at the banquet was the delightful music provided by Nancy McCaig, accordionist. Three members of the club are shown admiring the brilliant performance of the girl musician. They are Frank King, left, Arthur Jarrett, right, seated, and George Boyce a committeeman of the club, standing.



SPLENDID RECORD of service by club members was mentioned by Sam Smythe, President, shown addressing the gathering. At the head table, left to right, are Loftus H. Reid, Chairman of Toronto Hydro; William Hamilton, Immediate Past President of the club and Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario.



Hobbies! There is something about exercising the talent you possess to brighten your outlook on life. It is not only a pleasant pastime but often the pin money resulting from these achievements comes in handy. The value of handiwork brings to mind the ingenuity of Hydro employees in Northern Ontario. Some do an expert job of woodwork; others do leathercraft, and others have numerous accomplishments that are not in the daily routine of business and homemaking. Clubs receive their instruction from teachers of the Community Program of Crafts, Department of Education, 1118 Bay Street, Toronto. Without any set of tools or gift of using them, there is the hobby of growing plants, raising pets, making cards for special occasions, and reading old or new books.

* * *

Don't ask a geologist about minestrone, ask an Italian chef. It is a thick vegetable soup.

* * *

Cheese soufflé is a favorite Lenten supper dish. But do not make a soufflé unless you're sure everyone is going to be at the table on time. It begins to shrink ten minutes after it is taken from the oven.

* * *

A sit down strike is permissible for the ironing job. We all know lifting and standing is tiresome. Ironing usually requires both unless you organize the ironing job. If it is not convenient to sit and iron, you should wear well-fitting shoes.

* * *

The new ironing blanket embedded in the aluminum sheet seems to be attracting attention, but we have not invested in this 250-watt equipment.

* * *

Belgium pattern makers have supplied a new English company here with the design for a small inexpensive refrigerator. It is insulated with fibreglass, and it operates continuously using 82 watts.

* * *

Fish is the best meat substitute. Although it is less stimulating owing to the lack of extractives, it is more easily digested due to soft connective tissue. Because of its high protein content, a moderate temperature is necessary for best cooking results.

* * *

A good sauce for one fish is a good sauce for any kind of fish. Easily made tartar sauce is a mixture of 1/2 cup mayonnaise; 1 tsp. chopped pickle; 1 tsp. chopped celery leaves and 1 tsp. chopped olives.

* * *

If six Humpty-Dumptys had a great fall, we would pick up the cracked eggs, and separate yolks and whites. Then we would add enough cold water to cover the yolks, place a tight cover over the whites and store both dishes in the refrigerator. Yolks could be used a week later for custard, and the whites for a prune sponge dessert.

* * *

There is a noticeable difference between soft soda biscuits and crisp ones. Spread soda biscuits on a cookie sheet and bake them at a moderate temperature for 5 to 8 minutes. The crunchy, hot crackers will be ever so much better.

* * *

One and one do not make two when you cook rice. One cup raw rice is put in 8 cups water and 2 tsps. salt; cooked for 25 minutes makes three cups of rice.

* * *

How can we remember the method of preventing curdled tomato soup? Well, since the sauce is the starch mixture, the tomato acid is blended into the sauce only if the tomato juice is gradually stirred into the hot milk. Therefore it's red into white—R before W, as teacher would say.

* * *

There is no acid in coffee infusion, so if you are making coffee jelly allow enough gelatine to have it set firm. The proportion is 5 teaspoons of gelatine with 2 cups of coffee and 1/3 cup of sugar. By the way, coffee jelly on fruit salad plate is unusual but tasty.

* * *

More about acid—to overcome the acid of brown sugar which may cause curdling of milk (in candy, for instance), a few grains of baking soda may be added to the sugar.

* * *

For something to do on Sunday night—teenagers should be given the freedom of the kitchen and a saucepan for making candy. Chocolate Fudge recipe is as follows: Add 2 squares unsweetened chocolate to 3/4 cup of milk and stir until blended. Add 2 cups of sugar, few grains of salt and stir until mixture boils. Let mixture boil gently until soft ball stage is reached. Add 2 tablespoons of margarine and 1 teaspoon of vanilla. Cool to lukewarm and then each one can take a turn at beating the mixture. Beat until it loses its gloss. Turn at once into a greased pan. When cold, cut in squares.

* * *

Cooking for two can be wasteful or monotonous, so I try for as much variety as possible and yet take short cuts. With my muffin batter I make every two muffins different, in a set of eight muffin cups. Put chopped raisins in two of them, put a tablespoon of honey over two, a tablespoon of nuts in bottom of two and leave two plain.

STUFFED FISH

Use a whole fish, or any desired fillets. Clean the fish or wipe the fillets with a damp cloth, wrung out in cold salted water. Salt fish lightly and place on a greased baking pan.

2 cups of soft bread crumbs
½ can of tomato soup
1½ tablespoons of melted butter or fat
½ teaspoon salt
½ teaspoon of onion
¼ teaspoon poultry dressing

Mix the ingredients and put between two pieces of fillet or into cleaned white fish. Sprinkle with melted fat, and bake in an electric oven at 400 degrees until the fish is cooked. Usually from 8 to 10 minutes per inch thickness of fish is sufficient. Serves 6.

Lighter Lines



"My glasses! My glasses! You're striking me while I have my glasses on!"

The heat was oppressive at the cattle market, so after everything was all over Farmer No. 1 asked Farmer No. 2 to "step across home and have a glass of cider."

He went, sampled the cider, and was asked his opinion.

"How many barrels did ye say ye made?" he asked.

"Fifty-three. Not bad, eh?"

Farmer No. 2 shook his head sadly. "'Tis a great pity ye didn't have another apple. Ye could have made fifty-four."

* * *

Murray Moron says: People who go to a psychiatrist ought to have their heads examined.



"Relax! We're going to put you in a deep-freezer for next year's festival."

The teacher had been giving a lesson on the use of the word "immaterial" and to discover what the children had learned, asked them to bring some article to school demonstrating the word.

"Well, Johnny," she asked the next day, "what have you brought?"

Johnny, rising, said 'Will you please hold this stick lightly at both ends?"

"All right, what next?"

"Now let go one end."

"Which end?" the teacher asked.

"Oh, it's immaterial. There's glue on both ends."

* * *

A tree: Something that stands perfectly still for years, then all of a sudden jumps right into the path of a woman driver.

* * *

Overheard in front of the statue of Venus de Milo:

Mother to little boy: "See, Bobby, that's what comes of biting your fingernails."

* * *

Then there was the queen bee that married the electric bell. They produced a lot of little humdingers.

* * *

Bennett Cerf tells this one about a phone call received by one of these experts on "How to live comfortably on $25 a week."

A weak little voice said to him: "My wife and I live perfectly well on 65 cents a week. Can you top that?"

"Why no," said the astounded expert. "But tell me, how do you do it?"

"Oh that's easy," replied the small voice. "I'm a goldfish."

* * *

The one-s *poison,* it'll kill you;
The two-s *poisson,* it'll fill you;
But I am sure I'll take no loss on
A bet that there's no three-s *poissson.*
—With apologies to Ogden Nash.

* * *

"There goes Mrs. Moneybags in her new fur coat."

"Yes, isn't it wonderful what they can do with skunk these days?"

* * *

A middle-aged woman fell out of the window into a garbage can. A Chinese who was passing shook his head and said:

"Melicans velly wasteful. That woman good for ten years yet."

* * *

Two girls went for a tramp in the woods—but he got away.



"I understand he picks up some nice side money cutting hair."

"Sam, do you know how to make your pants last?"

"Sure,—make the coat and vest first."

* * *

"What kind of a fellow is Paul?"

"Well, the other night when he was sitting in the parlor with his girl, the lights went out, and he spent the rest of the evening tinkering with the fuses."

* * *

"You should have a wife like mine, George. She's an angel."

"You're lucky. Mine's still alive."

* * *

Did you hear about the firefly that backed into the electric fan? He was delighted—no end.



"Sorry, sir. I didn't understand whom you wished to see. We of the staff do not generally refer to Master Gerald as 'Noodlehead'."

NEWS IN BRIEF

"Tailored Typhoons"

Two giant 25,000-horsepower electric motors are helping scientists unlock new secrets of aircraft flight at supersonic speeds. By whipping up 1500-mile-an-hour gales, the motors, dubbed the "tornado twins," create conditions simulating those during actual supersonic flight. Installed in a new supersonic wind tunnel at the aeronautical laboratory of the National Advisory Committee for Aeronautics in California, the twin motors drive a giant air compressor 33 feet long and weighing 400 tons to produce "tailored typhoons."

Flexible Light

Scientists have developed a flexible light that will bend around corners or twist into hidden nooks and crannies, according to Canadian Westinghouse. The light travels through a plastic "light pipe," which is so flexible that it can be knotted and still conduct a light beam. The "pipe," made of clear, amber-coloured plastic called Fosterite, can be used to guide a bright beam of light around sharpest corners, or penetrate virtually inaccessible places.

How handy for looking into that dark hall closet, or fumbling in a poorly lighted cupboard!

Power Consumption Increases

In a report, recently issued by the Windsor Public Utilities Commission, the use of electricity in that city is shown to have jumped 50 percent since 1937. Average residential consumption rose from 156.4 kilowatt hours to 229 in 1948.

In the same period the cost of electricity, according to the Windsor Commission, decreased by approximately one-third.

Annual Appeal

Next month the Canadian Red Cross Society launches its annual national appeal for funds to support its various undertakings. This year's objective is $5,000,000, all of which must be raised by means of voluntary contributions.

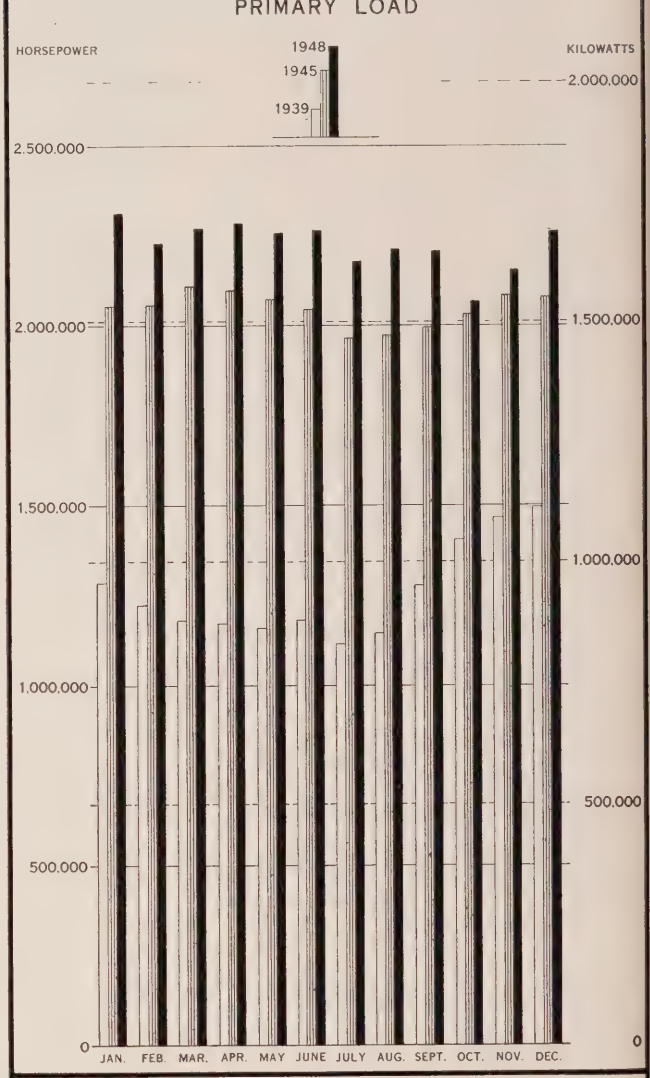
Red Cross services play a vital part in the health of Canadians. Its Blood Transfusion Service provides free transfusions, 75 Outpost Hospitals serve sparsely populated areas, and 10 modern Hospital Lodges are provided for hospitalized veterans. In addition, the Society gives instruction in swimming and water safety, nutrition, first aid and home nursing. At the same time, it has instituted Disaster Relief Organizations to aid those stricken by fire, flood, or other tragedy.

Special concern of the Junior Red Cross, largest youth group in the world, is the plight of thousands of crippled children, for whom they operate a number of hospitals.

Donors to the Red Cross may claim income tax deduction for amounts not exceeding 10 per cent of their income. Contributions may be sent to the Society's National Headquarters at 95 Wellesley Street, Toronto.

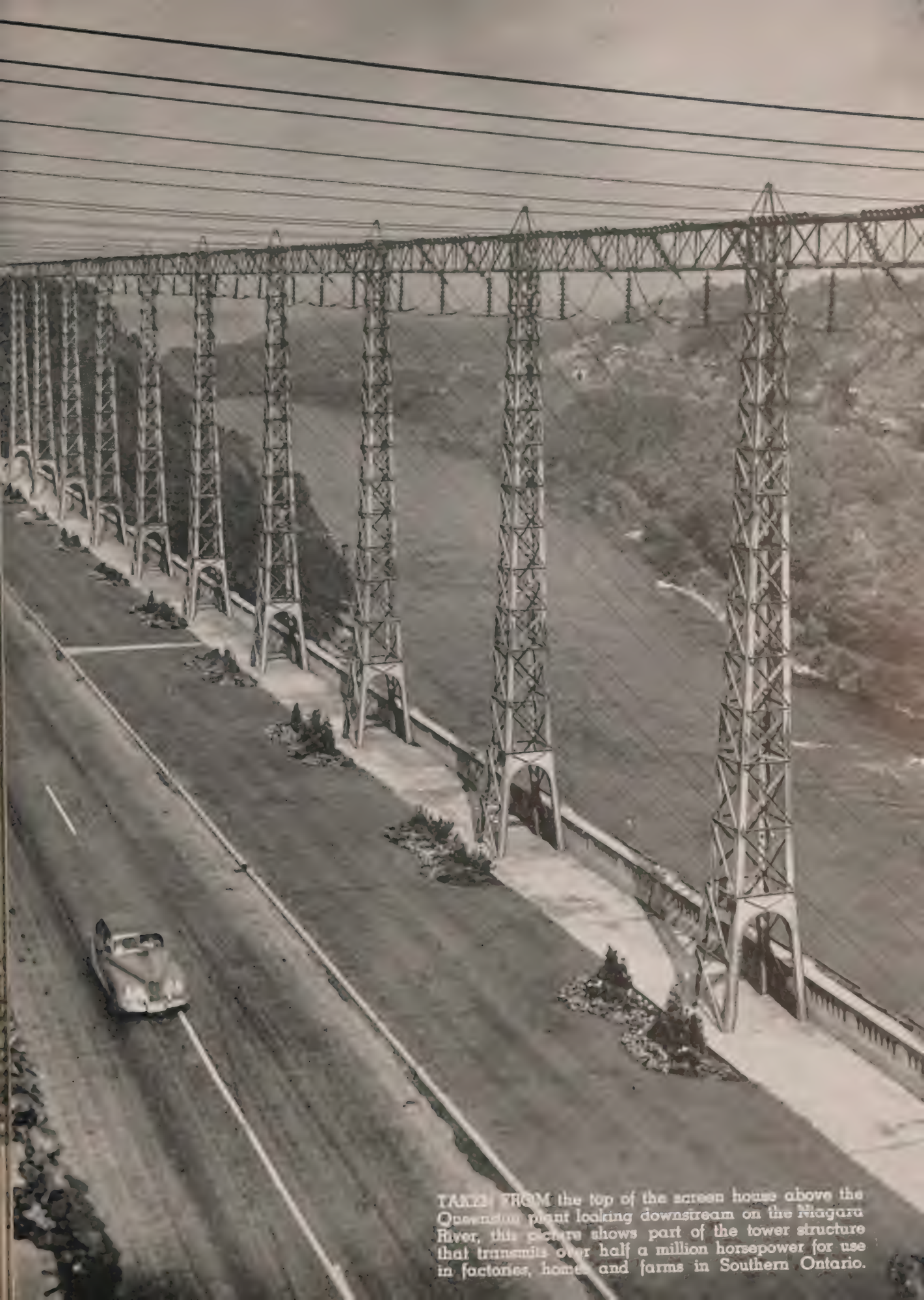
Lights For Naughton

Residents of the Naughton area, west of Sudbury, "saw the light" when electricity was turned on recently. Some 25 homes and buildings are now receiving Hydro service for the first time, while many more will get power as soon as lines can be extended to them.



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW DECEMBER, 1948	MAXIMUM 20-MINUTE PEAK KW DECEMBER, 1947	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System	1,827,642	1,926,128	− 5.1
Thunder Bay System	132,945	114,625	+ 16.0
Northern Ontario Properties	210,919	193,452	+ 9.0
TOTAL	2,171,506	2,234,205	− 2.8
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System	1,687,992	1,725,228	− 2.2
Thunder Bay System	154,545	114,925	+ 34.5
Northern Ontario Properties	222,224	194,127	+ 14.5
TOTAL	2,064,761	2,034,280	+ 1.5



TAKEN FROM the top of the screen house above the Queenston plant looking downstream on the Niagara River, this picture shows part of the tower structure that transmits over half a million horsepower for use in factories, homes and farms in Southern Ontario.



SKIING AT COBOURG

HYDRO News



EASTER

VOL. 26 MARCH-APRIL 1949 NUMBERS 3 and 4

Convention Caricatures

by W. B. MAC



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Chesley



JAMES BIRCHARD,
Beaverton



W. B. CURTIS,
Aylmer



G. F. HUTCHESO
Huntsville



C. J. McCORT,
Bolton



R. BUTTER,
Owen Sound



M. W. ROGERS,
Carleton Place



W. E. SWARTZ,
Preston



FRANK POWNALL,
Mimico



J. CLARK KEITH,
Windsor



J. F. WALSH,
Niagara-on-the-Lake



A. LESLIE,
Scarborough

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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MARCH–APRIL, 1949

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COVER SHOTS

WE like this month's front cover. We hope our readers like it. To our way of thinking, Easter Lilies are synonymous with the significance of this season. To photographer Burt Helling goes the credit for securing an illustration which seems to capture the arresting beauty of these flowers. When we saw the print we gave it the title "Easter." To say any more would appear to be superfluous.

The illustration on the back cover by Commission photographer Jack Horrell depicts construction at Hydro's Tunnel Development on the Mississagi River.



WITH THE broad waters of the Ottawa and the timbered hills of Quebec as a background, two members of a Hydro Land Survey party are shown in action with transit and notebook a few miles downstream from the site of the Commission's LaCave Development.

SPRING CONTEMPLATIONS

SPRING! There's something akin to magic in the very sound of that verdant, vibrant word which, once again, is on everybody's lips.

It's a word which seems to be synonymous with so many happy and thrilling associations —buds on the trees, the crocus, the return of many feathered friends, singing streams and romance.

Spring, too, is a season which prompts sudden and spontaneous reactions on the part of perfectly normal people. For instance, it need occasion no surprise these days if the head of the family is seen having a pre-season round of golf on the Oriental carpet in the living room. On the other hand, he might be seen casting a line or studying a seed catalogue. The lady of the house, perchance, may be busily engaged in studying advertisements portraying unique creations known as hats.

These and many other manifestations are abroad as Spring bursts forth again to beckon young and old to familiar and exhilarating adventures in Nature's great amphitheatres.

There are few who, for one reason or another, do not welcome Spring with its promise of new life and new hope. Present-day conditions seem to impart a new significance to this season. It brings something more than a psychological "lift" to many, particularly those who are called upon to assume high responsibilities in a world whose uncertainties present a challenge to enterprise, courage and endurance.

In the hearts of freedom-loving and peace-loving people it is inevitable that there must be a sense of frustration that efforts to achieve unity and honesty of purpose among all nations appear to have failed. That feeling is intensified all the more when one realizes that mankind stands upon the threshold of new and greater achievements in the realm of science—achievements which can confer untold benefits or the destruction of all these material advantages we now enjoy.

Under such conditions, it is well that we should all join in solemn contemplation of the full significance of Spring—and of Easter. From these contemplations, young and old alike, may derive new hope, inspiration and strength for whatever may be ahead.

"COMBINED OPERATIONS"

CONVERSION of the 25-cycle areas of Southern Ontario to 60-cycle is a long-term project whose magnitude calls for detailed planning of a most exacting character. When completed, the program will result in Ontario having a standardized frequency which will be in line with frequencies on other parts of this continent. At the same time, 60-cycle frequency will bring many and far-reaching benefits to the people now living in the 25-cycle areas of the province.

The project is one which calls for the closest team play, involving, to a very large extent, the co-operation of every Division and Regional organization of the Commission and of the local Hydro municipalities concerned.

This tremendous "combined operations" program will chronicle another important chapter in the history of Hydro, reflecting, to a marked degree, a continuity of the co-operative effort associated with the many noteworthy achievements which are synonymous with the name of 'Hydro" in Ontario.

QUEEN'S UNIVERSITY

MANY graduates of Queen's University now serving with Hydro will have a special interest in the endowment and income fund drive which has been launched by their Alma Mater.

The drive is reported to have three principal objectives: $1,000,000 for the construction of buildings which have been planned and are urgently needed; $2,000,000 additional for the endowment fund; and $175,000 as a minimum pledge annually from graduates as income donation.

Pressing need for the drive, it is explained, is the imminent loss of approximately $450,-000 in revenue as the student veterans depart and their special government grants cease.

Chairman of the Toronto Committee for the drive is Col. E. A. Baker, Managing Director of The Canadian Institute for the Blind, and the Secretary is E. A. Gill, General Manager of Canada Life.

Headquarters is located at 615 Yonge Street, Toronto, where space has been provided by Dr. Jack Hanna of Associated Medical Services.

Queen's, which is one of the two schools in Ontario conferring a degree in electrical engineering, has, through its many distinguished graduates, made an important and far-reaching contribution to the industrial and cultural progress of Canada.



Joins Hydro Family

Citizens Are Guests At "Party" Arranged To Mark Signing Of New Agreement As Town Becomes 306th Co-operative Municipality

ON Thursday, March 10, Hydro Chairman Robert H. Saunders and Mayor James R. Black of Oakville affixed their signatures to a document that officially made this attractive and progressive lakeshore community the 306th member of the Hydro family in Ontario.

While power had been supplied by the Commission to the town since 1930, Oakville had been operating its own system and was not hitherto a member of the Hydro municipal co-operative group.

The occasion was marked by a special evening held in Victoria Hall to which all of Oakville's Hydro consumers and their families were asked by special invitation. Representing the Commission were Chairman Saunders, Richard L. Hearn, General Manager and Chief Engineer; H. D. Rothwell, Administrative Assistant—Regions; E. R. Lawler, Manager, Toronto Region; and M. J. McHenry, Director of Consumer Service.

Although competition was provided by the heaviest snowfall of the winter, in fact of several winters, no one present at Victoria Hall that evening could deny that "Your Hydro Family Party" was an unqualified success. In spite of the fact that the storm had made it one of those nights for remaining by the family hearth, the hall's seating facilities were filled to capacity when Hillmer Loftquist, Chairman of the Oakville Water and Light Commission, introduced Mr. Saunders.

In extending the Commission's welcome to the citizens of Oakville, the Hydro Chairman pointed out that their decision to join Hydro, as decisively indicated by the vote in the recent plebiscite, was a true demonstration of democracy at work. "The signing of the new contract tonight marks another significant milestone in the history of your progressive municipality," said Mr. Saunders.

The Chairman linked the occasion with two other auspicious events occurring recently in Oakville, the laying of the cornerstone for the Oakville-Trafalgar Hospital and the introduction of postal delivery." These three separate events are highly indicative of the fact that Oakville is not satisfied to stand still," he stated.

A brief outline of the background of Hydro was then given by Mr. Saunders, touching on the three phases of the Commission's operation in the municipal and rural fields and the Northern Ontario Properties.

"As I mentioned previously, Oakville is the 306th member of our cost municipalities," said the speaker. "In addition we have 230,000 rural consumers at the present time and by the end of the year that figure should stand at 259,000."

Savings Effected

Just what specific saving would be the result of their affiliation with Hydro was made very clear to the gathering by Mr. Saunders when he pointed out that under the rate set down in the new contract, Oakville's power bill for January was $6,685.21. "If you were still purchasing power at the old rate of one cent a kilowatt," said the Chairman, "your bill for January would have been $9,117, a saving for the month of $2,431.79, or an average annual saving of $15,000 to $20,000."

Following Mr. Saunders, Mayor Black spoke briefly and pointed out that more than 90 percent of the municipalities in Ontario eligible to join Hydro had done so. "In every case," he observed, "domestic consumers have benefited by lower bills."

A colourful touch was added to the actual signing of the contract when it was revealed that the pen used in the ceremony was part of a desk set "found" by Mayor Black at Mussolini's summer home in Rimini, Italy, when His Worship was stationed there as an officer in the Canadian Army during World War II.

At the conclusion of the brief signing ceremony, the Hydro colour film, "Niagara the Powerful," was shown. For the balance of the evening the guests were at leisure to inspect the pictures and educational displays arranged around the hall depicting all phases of the Commission's province-wide activities. Refreshments were provided by the Oakville Chamber of Commerce.

In connection with the film and the exhibits, arrangements were made on two

(Continued on page 22)



GLEE CLUB of the Oakville-Trafalgar High School, under the direction of F. E. Brealey, were a highlight of the evening's program.



CENTRES OF interest were the various Hydro educational displays. This one shows the steps in the flow of electricity from powerhouse to home and factory.



AFTER THE signing of the new contract. Left to right: Chairman Hillmer Loftquist of the Oakville Commission; Chairman Robert H. Saunders, Mayor J. R. Black, Russ Barlow, Manager of the Oakville Light and Power Commission; Richard L. Hearn, General Manager and Chief Engineer; M. J. McHenry, Director of Consumer Service; and E. R. Lawler, Toronto Regional Manager.



A GROUP of the guests at the informal dinner sponsored by the Oakville Chamber of Commerce prior to the signing ceremony.



TOWARDS THE end of the evening attention was focused upon the refreshment tables where copious quantities of coffee and cake were dispensed to the hungry throng.

HYDRO'S LAND SURVEYOR



FROM the very nature of its name, one would gather that The Hydro-Electric Power Commission of Ontario is primarily concerned with water and the potentialities of same as a source of electricty. What one might *not* gather so readily, however, is the role that land plays in the development of that power.

For example, there are the great generating stations of the Commission, the extensive projects now under construction, the vast network of transmission facilities and the numerous properties necessary for their efficient administration. It is the task of the Land Survey Section of the Property Department to specifically describe and define that land in order that the proper conveyance of title may be made to the Commission and the property thus be legally acquired.

Land Survey was officially authorized as a section in 1934 but was not actually organized until three years later. At that time it had a staff of four, two of whom were Ontario Land Surveyors. In the intervening years it has continued to grow until at the present time it numbers a field force of about 150 and has an office strength of 60. In charge of the section's operation is W. H. Williams. His assistant is I. K. Chalmers, with C. E. Stauffer and D. H. Richardson in charge of field operations. These four gentlemen, of course, are Ontario Land Surveyors.

Before going any further it might be well to establish some pertinent facts that the aforementioned quartet was careful to bring to our attention: To begin, land surveying is not merely the surveying of land. That may appear to be slightly paradoxical so we will endeavour to explain it as clearly as it was explained to us: The professional practice of land surveying originates with land tenure. Wherever land is owned, by individuals, the state or corporate bodies, it is obvious that some accepted method of defining boundaries must be agreed upon. It is the duty of the land surveyor to set forth the land limits and describe them for conveyancing. This may be a bit elementary to many who are reading this article but we are taking the liberty of persuming that the majority of you are as unfamiliar with the subject matter as we were when we first embarked on this assignment. Those who were previously "in the know" will just have to be patient and bear with us.

by
John A. Murphy
Hydro News

However, enough of such digressions. Land surveys, so we are informed, may be divided into two general categories. In the first type the surveyor may have the task of subdividing land into areas or parcels where no previous boundaries existed. In the second type he is faced with the problem of re-establishing boundaries created sometime in the past. Often he must attempt to trace the work of a long-dead predecessor whose work has since been almost completely obliterated by the relentless ravages of time. Many surveys conducted today combine elements of both the types mentioned above, making the task of the surveyor anything but monotonous.

To adequately cope with these problems, the professional land surveyor must possess a knowledge and experience encompassing may of the requirements of the lawyer and the engineer. The legal aspect may be readily gleaned from the part played by land titles and various government statutes, while the role of

Land Survey Section Plays Integral Role In Defining And Acquiring Hydro Properties

engineer is necessary in dealing with the practical and mathematical problems that form the basis of the survey.

Topography First Consideration

In considering the practical side of land surveying as it relates to the operations of the Commission, we can derive a first-hand conception of its functions from the part it has taken and continues to take in Hydro's major project, the Des Joachims Development.

As with any hydro-electric development, the limits of the Des Joachims Project were based on topography, with true scientific disregard of such mundane matters as boundaries and subdivisions. Thus in the wake of the engineer came our land surveyors, faced with the rather prodigious task of determining how the lands of each owner within the confines of the project were to be affected by the proposed development.

First step in this procedure was the study of a compiled plan of the townships in the area. On the plan all the various aspects of the project were shown: flooding contours, power site, construction camp and roads. In order to distinguish between private property and Crown Land, title searches were made of the records in the Registery and Land Titles offices and the Department of Lands and Forests. These searches presented another problem as the land surveyor had to ensure the co-ordination of all legal and jurisdictional provisions with the land requirements of the Commission's engineers. The latter, of course, were simultaneously going ahead locating roads, contours and the other engineering features of the job. It was apparent then, that the closest co-operation was necessary between the land surveyor and the engineer to guarantee their joint findings being available on schedule.

For the Des Joachims project it was necessary to run a control survey for the 60-mile extent of the development. Purpose of the control was to integrate and co-ordinate all the surveys made in the area of the project. Reverting to the technically flawless terminology of our informants: "the control was on a plane co-ordinate basis with a reference monument of the Geodetic Service of Canada as origin."

With the establishment of the control, the original surveys of all the affected townships had to be re-established to set forth the true legal position of all lots, blocks, concessions and road allowances. To ensure these finding their full recognition in the eyes of the law, the Surveyor-General of Ontario has ruled that upon its confirmation, the Hydro's Des Joachims land surveys have the status of a Crown Survey. Thus, with the information compiled in the field, the Commission was free to let land-clearing contracts and to open negotiations with the owners concerned for the legal acquisition of their property.

Old Surveys Re-established

One of the most interesting, and often most difficult, tasks of the land surveyor is the re-establishing of old surveys. Since many of these were carried out anywhere from 80 to 90 years ago, the difficulties are obvious. Furthermore, the law requires that the original surveys must be re-established not as they should have been run, but as they actually were carried out at the time. In the intervening period the land in question may have been logged over or burned. Often it has been cleared and farmed and the fences placed in accordance with where the owner "thought" the original lines were run. Frequently, too, posts are uprooted and destroyed for no particular reason, even though this is an indictable offence punishable with a maximum of seven years in durance vile as the guest of the citizens of Canada. From the severity of the sentence, it may be gathered how important survey posts are in the view of the law. To aid him in his search for evidence of original surveys, our man often works with copies of his predecessor's original notes. In the light of such revelation, no one will be particularly nonplussed to learn that the finding of an old survey post is often greeted by the surveyor with an enthusiasm comparable to an archaeologist unearthing a Pharaoh's tomb.

Several interesting relics of early surveys along the Ottawa and Madawaska Rivers have been brought to light by Hydro's land surveyors with the dates, still faintly legible, going back as far as 1859 and 1862. Although these wooden fragments are usually in the last stages of disintegration, they are tenderly carried back to camp. Thence they go to the Research Laboratory for special treatment to preserve the wood fibres, and eventually reappear on the walls of the Land Survey office as trophies of the hunt.

Visit to Mattawa Camp

After making a valiant effort, in our own opinion of course, to absorb the general academic background of Hydro land surveying, it seemed that the next logical step in the assimilation process was a visit to one of the field camps for a few on-the-spot impressions. Since someone had told us that land surveyors were a hardy lot and often sleep on the bare ground even in midwinter—under a blanket of

(Continued on page 10)



IN CHARGE of the operations of Hydro's Land Survey Section, is W. H. Williams, shown here at his desk in consultation with his assistant, I. K. Chalmers. From an original staff of four, the section has increased to a field force of 150 and office personnel numbering 60.



PONDEROUS PROBLEMS were certainly being discussed when the camera shutter clicked for the photo at left. Wearing the tweeds and the serious expression is Charlie Stauffer, Field Supervisor in the Land Survey Section, while the gentleman under the chapeau is Glad Taylor, in charge of the Survey Camp at Mattawa. They might be thinking of calling a taxi, n'est-ce pas?



THE OPERATION depicted at right, we were informed, is known as reading a slope angle for chainage. The trio so employed are, from left to right, Eddy Smith, Gordon Kendall and Larry Tait.



"MUSIC HATH CHARMS . . ." Not that there are any savage breasts in this group that require soothing, but some of the rapturous expressions are certainly worth noting. We feel compelled to remark that the musical inspiration for it all was an Irish air sung by an adopted son of the Ould Sod, that broth of a boy, Bing O'Crosby, begorrah.







IN THE photo at the upper left, a survey party are engaged in a typical chore known as sighting a hub for a line.

•

ANOTHER PHASE of land surveying is shown left centre, where the men are using their axes in clearing away the underbrush to cut a line.

•

IN THE view at the lower left, Murray Aitcheson has set up his transit over by a marked guide post and is setting another member of the party "on line".

•

ABOVE WE find Larry Tait and Gordon Kendall checking a township plan on the outskirts of Mattawa.

•

HEADQUARTERS OF the Land Survey Section at Mattawa is the group of buildings shown at lower right. The camp is located on the main highway about four miles from town.





LAND SURVEYORS

(Continued from page 7)

snow of course—we gathered together all the heavy clothing belonging to our next-of-kin, and headed for the survey camp on the Ottawa River near Mattawa, Ontario. Our companions on this daring expedition were Ted Johnston, the intrepid photographer, and Charlie Stauffer of the Land Survey Staff, who was to act in the dual capacity of guide and interpreter.

Perhaps the first surprise in store for us when we arrived at our destination—about 60 miles upstream from Des Joachims—was the fact that the camp consisted of a cluster of rather cosy-looking huts (if such phraseology is permissible). No one was cavorting about in their bare feet in the snow, in fact those persons who were engaged in outdoor activity looked just like ordinary people dressed appropriately for working out-of-doors in the winter. We began to shed our inferiority and let out teeth chatter quite audibly.

After the above-noted acclimatization we were introduced to the gentleman in charge of the Mattawa Camp, one W. E. G. Taylor, Jr. This turned out to be "Glad" Taylor whom we had known in the R.C.A.F. As we exchanged remarks suitable to such an auspicious occasion, we noticed Mr. Taylor's obvious physical fitness and decided that this outdoor life agreed with him.

Two Projects Involved

Work being conducted at the Mattawa Camp during the period of our visit involved surveys of the area to be flooded by the Des Joachims Development. Hydro, incidentally, is taking an increasingly greater part in the life of the citizens of Mattawa, as the site of the new LaCave Development is located only a few miles upstream. Surveys of the area expected to be under water when LaCave is completed were another part of the work being conducted from the Mattawa Camp. It was interesting to note that the Control Survey for Des Joachims extended up the Ottawa River to Mattawa, while the Control Survey for LaCave in turn, had to be run as far north as Temiskaming.

Since much of the work extended well into the bush, some of the field parties remained out for the day, taking their lunches with them and returning in time for dinner. After breakfast those who were to stay out all day got together over a heavily laden table in the cookhouse and made up their own lunches. Some of the revolutionary types of sandwiches thus concocted would make the celebrated "Dagwood" sandwich pale into gastronomic insignificance. While dealing with culinary matters, it might be well to add that the food at the camp is really good.

Since we have already held forth at considerable length on the subject of what the land surveyor does in the field, we have no intention of embarking on further verbal description of the Mattawa musketeers in action. Ted Johnston did a pretty thorough job of making a pictorial record of the various aspects of the work, and since we are convinced that one picture is usually worth a multitude of words, it would be well to let the pictures tell the rest of the story.

However, there are always a few matters not easily discernible from photographs. For instance, the general atmosphere of efficiencey and pleasant interest in the job that permeated the camp at Mattawa. It could be called esprit de corps, perhaps, but that seems a bit too formal for what we are trying to convey. There were 22 men in the camp and they were a happy group. Recreation in such places is usually a matter of general ingenuity and there was no lack of that quality evident at Mattawa.

Task Not Finished

However, so much for the aesthetic side of land surveying. It might reasonably be supposed that with the forwarding of the plans and descriptions of the required properties to the Commission's Legal Department the work of the land surveyor in an area was complete. But there still remains the preparation of descriptive plans for the Dominion and Provincial Governments for the lands within their respective jurisdictions. It has been the experience of the section that there are still surveys to be done for various purposes long after the developments have been completed and the engineers departed for greener pastures.

Before concluding this little opus, a mention should be made of Photogrammetry. This latest development in the science of land surveying makes use of instruments and new techniques, and, under certain conditions, eliminates some of the standard field procedures of surveying. Building, roads, shore lines and forest cover may be plotted within the scaling error without resorting to a detailed location survey. Certain types of land plans can thus be completed in less time and with less effort by using the township survey network as a control and combining the ratio-projector technique with stereoscopic study of the photos.

Space does not permit a detailed discussion of Photogrammetry at this point, as it has still many limitations. As yet it has not reached the stage whereby the limits of land purchases may be precisely described according to legal specifications. It is growing increasingly important, however, in showing existing conditions in any given area. But it will be some time before Land Surveying attains the point where the surveyor in the field will be spared the necessity—and also the deep-seated satisfaction—of delving in the tangled underbrush and swampland for a corner post embedded there many years before by an earlier practitioner of his fascinating profession.

"Lengthened Shadow of Employees"

Important Role In Relation To Company's Success Discussed at A.M.E.U. Panel.

A COMPANY'S success and the dependability of its reputation will be measured directly in proportion to the extent to which the employees have their imaginations stimulated and the extent to which they are inspired by leadership.

This observation was made by Don Carlisle, Treasurer of the Goodyear Tire and Rubber Company, when addressing the Accounting and Office Administration session at the recent A.M.E.U. convention.

A company, Mr. Carlisle declared, was the lengthened shadow of its employees. Employees, the speaker stated, were a company's greatest asset, for without them, capital, tools and raw materials would remain dormant and nothing could take place. He pointed out that it was of paramount importance that employees had a clear picture of the working of an enterprise and their relationship to it, otherwise they would not have the confidence that developed from understanding.

Speaking of his own company, he told of the system of having employees become shareholders—of pamphlets distributed to the staff explaining how various units of machinery were "capital," and added the information that in Canada approximately $18,600 worth of capital was in use for every employee on the payroll.

The speaker left with his audience this thought—"In the final analysis, it is the mass opinion of informed industrial employees that can swing the balance for or against our system of free enterprise. The employee's goodwill toward the company and the system under which we live will depend to a great extent on how well we succeed in stimulating his imagination and in showing him the great possibilities latent in our manner of living and working."

"Work Order Accounting," particularly as related to labour and stores, opening presentation of Panel III, Accounting and Office Administration, was brought before the meeting by R. H. Becker of Kitchener. The Chairman of the Accounting and Office Administration Committee of the A.M.E.U., M. W. Rogers, turned the afternoon's program over to George Appleton, Office Manager of Toronto Hydro. Mr. Appleton introduced the speakers of the afternoon and led ensuing discussions on Accounting and Employee Goodwill.

Mobile Conversion Crews Resemble Army In Action

Southern Ontario's Present 25-Cycle Areas May Be Converted To 60-Cycle Within 10 Years Instead Of 15, H. H. Leeming Tells A.M.E.U. Delegates

PRACTICALLY all Hydro consumers in the present 25-cycle areas of Southern Ontario may be enjoying the benefits of 60-cycle frequency within the next ten years, or five years sooner than originally anticipated.

In pointing to this likelihood, H. H. Leeming, the Commission's Director of Frequency Conversion, told A.M.E.U. delegates at the recent convention in Toronto, that the attaining of such an objective would involve converting 900 motors each day and working an average of 200 days a year.

The nature of the work, he stated, was vastly different from anything the Commission had undertaken previously. In the field operations, close scheduling was essential in that feeder cuts had to be planned, not within a week or a day, but within the hour. Conversion crews working in each area, he said, would be mobile; in fact, the planning and operations in the field, in certain respects, were very similar to an army operation.

Mr. Leeming estimated that there were 1,800,000 motors to be converted. He broke this down into 166,650 industrial motors, 175,000 commercial motors, 150,000 small domestic motors, 182,000 fan motors, 300,000 refrigerators motors, 542,000 washing machine motors and 280,000 vacuum cleaner motors.

May Complete Sooner

The estimated time to complete the conversion, the speaker said, had been given as 15 years, but by checking the growth in 25-cycle loads as far as economically feasible, it was hoped to complete the work in from ten to twelve years.

No project during the past thirty years had involved to such a large extent every division and regional organization of the Commission as the frequency conversion program, Mr. Leeming declared.

In its initial stages at least, he stated, the program would impose a heavy load on an already heavily loaded staff and would call for patience and the full co-operation of all divisions of the Commission's organization. To carry out this work efficiently and expeditiously would necessitate the continuous co-operation of every electrical manufacturer and certain other manufacturers within the province, the municipalities and the entire Commission's organization.

Material supply and manufacturing facilities were major factors which would govern the conversion program, he pointed out.

Continuing, Mr. Leeming stated that the total frequency conversion project had been allocated to two main divisions of the Commission—the Frequency Conversion Division and the Engineering Division, the latter having supervision of the conversion of the Commission properties, namely, the generating stations, transmission facilities, transformer stations and municipal systems. The Engineering Division, he explained, would give engineering assistance to municipalities, when requested, concerning data on the capacity of the stations and their location with respect to load centres; the type of distribution system—radial or network; which transformers should be used "as is," those which should be rebuilt to specifications and those which should be replaced. Information, he continued, might be required also on feeder voltage regulators or capacitors necessary to control voltage within allowable limits, always having in view other control devices on the system.

The Frequency Conversion Division, he continued, would engineer, plan, supervise, purchase materials and carry out the actual work, either directly or by contract:

To convert, with the consent of the owner, the electrical stations, apparatus, appliances or works of any rural, domestic, commercial lighting or industrial power consumer in order that such equipment may operate successfully at 60 cycles;

If requested, to convert or replace, for a municipal corporation or municipal commission, all existing single phase or polyphase meters used for billing purposes so that 60-cycle power may be measured with required accuracy;

To convert or replace all Commission-owned single phase and polyphase meters used for billing purposes on the Commission's rural systems;

To convert, in consultation with the municipal systems, the electrical apparatus, equipment or works in any municipal pumping station or street railway system.

Well Under Way

Mr. Leeming said that the development of the frequency conversion division was well under way. A staff of engineers was already at work. Policies and procedures, work schedules and area maps were being prepared. Orders were being placed for the large quantities of bulk materials which had to be carried in stock. These orders were being placed even before the staff was fully organized and a detailed inventory of consumers' equipment had been made.



H. H. Leeming

The Director of Conversion stated that a contract had been placed with the Canadian Comstock Company Limited for the carrying out, under the Commission's supervision, of the field work in the Scarboro, London, Sarnia and Hamilton areas. Eventually the contractor's field personnel would number between 1,700 and 2,000, and approximately 500 cars and trucks would be required for the mobile forces.

Mr. Leeming announced that to house the vast amount of materials required throughout this ten to twelve-year program a minimum of 100,000 square feet of storage space would be necessary. This storage would be located at the Islington Service Centre. In addition, a motor rewind shop and meter change shop would be established.

Concluding, Mr. Leeming pointed out that the nature of the work, the problems which would arise from hour to hour would necessitate the streamlining of the Commission's organization. It would be realized, he added, that a project of such a magnitude would involve close co-operation by every municipality and every manufacturer in Ontario with the Commission's organization.

Can Play Important Role

O.M.E.A. In Position To Render Valuable Assistance To Ontario Hydro, Says G. F. Hutcheson In Presidential Address

IN THE realization and fulfilment in service-to-consumer terms of the tremendous program of development upon which Hydro is now engaged, the Ontario Municipal Electric Association will have both the duty and opportunity of playing a highly important role. This was emphasized by G. F. Hutcheson, President of the O.M.E.A., in his address to delegates from the Hydro municipalities in the annual convention at the Royal York Hotel, Toronto.

Mr. Hutcheson expressed the belief that the O.M.E.A., because of its close contact with consumers and their needs, was in a position to render much valuable assistance to the Ontario Hydro Commission in a consultative capacity. He intimated that there was a growing opinion in the O.M.E.A. that this sphere of usefulness would be enlarged if the Association were strengthened by some representation from rural communities where there were now altogether about 229,000 Hydro consumers.

The importance of the municipal Hydro commissions had been strikingly illustrated during the recent critical power shortage, Mr. Hutcheson said. Not only had their efforts been largely instrumental in securing the co-operation of domestic consumers in the saving of electricity, but with their intimate knowledge of local conditions, they had been able effectively to back up the H.E.P.C. in its campaign to enlist the support of labour and industry.

Chairman's Efforts Lauded

Ontario Hydro, Mr. Hutcheson said, had sought and welcomed the assistance of the municipal commissions and had kept them continually informed upon changing conditions. This, he inferred, was the kind of teamplay that was bound to achieve gratifying results, and he felt that the municipalities owed a good deal to Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario, who, by word and deed, had done everything possible to promote a spirit of co-operation.

"The name of Hydro's Chairman has become a household word throughout the length and breadth of Ontario," declared Mr. Hutcheson. "He has told us all about what Hydro is doing and what it proposes to do. And he has made no secret of the problems which we all have to face. His leadership is reflected in the great progress made in the developments now under construction."

The past year had been a strenuous one for the O.M.E.A., the speaker said, especially with regard to committee meetings. He himself, had attended all the district meetings with the exception of one. Everywhere important business had been discussed, and it was at these meetings that most of the resolutions scheduled to come before the convention were born. A special meeting of the O.M.E.A. executive had been called last June to discuss the frequency changeover project. Endorsation had been given, with the proviso that the H.E.P.C. give consideration to any recommendations with respect to financing. On the invitation of Ontario Hydro, visits had been made by members of the O.M.E.A. to many of the power projects under construction. In this way, they had been able to get a first-hand picture of the magnitude of the Commission's undertakings.

Adequate Wiring Program

Mr. Hutcheson referred to the co-operation of the O.M.E.A. and the Association of Municipal Electrical Utilities (A.M.E.U.) in the interests of Hydro consumers. For many years the two Associations had held a joint annual convention. Teamplay was the foundation of all Hydro endeavour. In the future, even more than in the past, there would be many closely related problems which the two organizations would have to consider together. That this would be the case was suggested almost immediately at the conclusion of the President's address when Bert Merson, Vice-Chairman of the Toronto Hydro-Electric System, presented a report on the activities of the Electric Service League of Ontario. Mr. Merson pointed out that both the O.M.E.A. and the A.M.E.U., are members of this League and that through the facilities at their command are in a position to take a leading part in the furtherance of its objectives.

As is generally known the Electric Service League of Ontario stems from the very successful Toronto Electric Service League, the original advocate of "Red Seal" adequate wiring. The report showed that since the inauguration of the province-wide organization about three years ago, the "Red Seal" type of wiring has been introduced in 145 municipalities across the province, and Mr. Merson stated that by the end of 1949 it was expected that the number would be increased to 200.

Mr. Merson pointed out that adequate wiring must not be misconceived as being synonomous with the extravagant use of electricity. Fundamentally, it meant greater safety and greater convenience for the householder. To obtain the maximum benefit from domestic electrical services, adequate wiring, implying also an adequate number of outlets, was necessary in all types of modern homes.

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THE RETIRING President of the A.M.E.U., J. E. Teckoe, Jr., is presented with an engraved sterling silver bowl on behalf of his associates by his successor in office, J. Clark Keith of Windsor. A proud spectator at the brief ceremony was the gentleman in the centre, J. E. Teckoe, Sr., of Niagara Falls.

DVANCING ON our camera in what might be called a line abreast ormation are C. Ogilvie, Hamilton; R. V. Smith, Perth; J. W. Young, astern Region; O. S. Luney, Eastern Regional Manager, and F. S. Stratton of Toronto.





ANY convention the stration desk is al- s a focal point of h hustle and no bustle. Here are ew of the 1,100 gates in the act of uring badges and rams on the open- day of the con- vention.

•

D FOOD and good panions are an old ula for *joie de vivre* it seems amply in ence among the strolling out of Banquet Hall after ne of the joint luncheons.



MANY OF th delegates go "quite a lift from the conven tion proceeding A very literal in terpretation this fact is to b found in the ac companying pho tograph showin a group of th boys going up the world v one of the Roy York's elevator





WE ARE not in a position to say whether the five stalwarts shown here were sallying forth to engage in an Indian wrestling match with the other quintet above but the situation does look promising. Left to right: F. G. Adsett, Belleville; C. E. Crease, Barrie; Jamie Smith, Toronto; S. R. Walkinshaw and W. R. Stewart, North Bay.

Hydro's "Men of Trees"

IF you should drive into Hydro's Training Centre in Etobicoke Township and see young men scampering up ropes like monkeys or dangling in mid-air from ropes—don't be alarmed. It's all part of the training given to forestry learners as part of the intensive course of instruction.

It's a job for real "he-men," the visitor to the Training Centre will learn, watching the virtual commando-like tactics which the forestry worker recruits perform in using ropes and in climbing them. No soft-muscled office worker would fit in this training picture. As the Etobicoke Centre's superintendent, William Pay, pointed out: "It's a pretty rugged life. A young man needs more than just a stout arm. He requires plenty of courage, a sharp eye and a keen, alert brain. He has to know his business, too."

Tree Identification

A mistake in trusting his weight to a tree limb, without the use of a safety rope, could result in serious or fatal injury. That is why the forestry beginner is thoroughly instructed in tree identification, knows hardwood from softwood and must understand fully the proper handling of ropes.

But it's not all muscle work in this training course. There are numerous classroom lectures on the growth of trees, the proper way to cut them and other allied subjects. The beginner has to do some serious "plugging" on his notes and with the textbooks provided.

The visitor to the Training Centre is impressed by the fact that it is one of the most unique schools anywhere in Canada. With no other school available to teach embryonic forestry workers, Hydro set up its own instruction system at the Etobicoke Training Centre last spring. The Centre now provides a well-rounded-out course of combined theoretical and practical work in forestry as applied to line clearing and tree preservation tasks.

Another unusual feature of the training course is the fact that textbooks to guide the beginners in this phase of forestry work were not available, so Hydro instructors compiled their own data and have made that information available in neat loose-leaf "textbook" style.

The forestry course, Hydro News was informed, is only one of the courses conducted at the Commission's Training Centre. The Division requesting a course for its employees, supplies and approves data used for training purposes and provides experienced employees who act as instructors.

The young men who enter the employment of the Commission in the forestry branch spend their first two weeks at the Etobicoke Training Centre learning tree identification, rope climbing and proper tree pruning methods. Instructors give the neophyte forestry workers a thorough grounding in these subjects. The art of climbing with great agility, so necessary on these jobs, is practised on the grounds of the Training Centre under the critical eye of an instructor. And safety is stressed at all times.

After two weeks of instruction at Etobicoke, the forestry learners go out into the field to the various Hydro regions and there put into practise for a month under supervision of an instructor what they have learned at the Training Centre. Then they are brought back to Etobicoke again for another fortnight for further instruction and also to demonstrate to the instructors that they are proficient in the

(Continued on page 23)

by
C. G. W. Macintosh
Hydro News



MEMBERS OF the forestry learners class at Hydro's Etobicoke Training Centre demonstrate their ability to climb ropes. In this picture, B. Raymond, left, and R. L. Care, right, show J. R. Border, F. M. Cox, P. F. O'Connor, D. R. McMullen, Instructor; Jim Hunter, noted radio newscaster, William Pay, Superintendent of the Etobicoke Training Centre and K. W. MacDermott, Training Officer how it is done.



EXAMINING ONE of the "textbooks", used by the men studying the forestry course at Hydro's training centre in Etobicoke Township, in this picture are K. W. MacDermott, left, Training Officer, and 'Jim" Hunter, well-known radio "Talking Reporter." Seated is William Pay, Superintendent at the Training Centre. The loose leaf "textbooks" were prepared and compiled by Hydro instructors for the course.



A REFRESHER course for Hydro forestry superintendents was under way at the Etobicoke Training Centre, when the Hydro photographer took this picture. Seated, left to right, are: A. F. Potter, Toronto Region; L. C. Warner, Niagara Region; W. J. Kinnear, Eastern Region; F. E. Simpson, East Central Region; A. Harrington, Training Centre Instructor, and F. Corin, Head Office Forestry staff.



KEEN INTEREST is indicated in this picture as members of a forestry learners class receive instruction in rope work. Looking on in the background are, left to right, K. W. MacDermott, William Pay, and George Bradford. Jim Hunter is seen in the front row with the class members intently watching as the Instructor, Steve Milne, left foreground, explains rope handling technique to the class. The members of the class are, left to right, R. T. Davis, J. W. Green, R. E. Cooper, J. R. Wise and D. G. Ford.

Year Of Great Achievement

Commission Chairman Robert H. Saunders Directs Attention To Hydro's Record-Breaking Program — Reviews Problems And Progress Of Past Year When Addressing O.M.E.A. - A.M.E.U. Delegates

LAST year was a period of tremendous achievement for Hydro. In the construction field, it was a year of impressive progress. Administratively, the Commission was geared to meet the new conditions imposed by expansion and development. And last, but not least, a co-operative effort unprecedented in Hydro history had enabled the Commission to maintain essential services to consumers during a critical period of power shortage. Now Hydro was preparing for further advance all along the line.

These salient facts were brought out by Hydro's Chairman Robert H. Saunders in an address to delegates of the Ontario Municipal Electric Associaion and of the Association of Municipal Electrical Utilities at their recent joint annual convention at the Royal York Hotel, Toronto.

Introduced by G. F. Hutcheson, President of the O.M.E.A., joint Chairman at the meeting with J. E. Teckoe, Jr., President of the A.M.E.U., Mr. Saunders, as usual, lost no time in getting to the meat of his discourse. First of all, he dealt with the recent acute situation caused by water conditions.

"Hydro," he said, "weathered the storm of criticism brought about by a situation over which we assuredly had no control and came through with flying colours. This was accomplished, I believe, because of the fact that throughout the difficult fall days Hydro, through the good offices of the local commissions and managements, the Radio and the Press, kept the people of Ontario informed as to the actual facts. When we had to cut power, the people were given the reason for those cuts, when conditions commenced to improve, the people were given the actual facts which made these improvements possible."

The Chairman paused. It was very still in the great banquet hall where the delegates were assembled.

"Looking back," Mr. Saunders continued, with graver emphasis, "it seems like a miracle. Providence certainly answered the prayers of the people of Ontario."

People Kept Informed

Throughout the critical period, Mr. Saunders said, he had sought to give the actual facts as those facts unfolded themselves — in September, October and the first part of November when conditions were getting progressively worse; and then, during the latter part of November, and the whole of December, January and February when conditions progressively improved. He wished to make a short statement now in summing up the picture.

Hydro's Chairman went on to explain that, in the Southern Ontario System, some 60 percent of the power comes from plants located on continuous flow rivers — the Niagara and the St. Lawrence (the St. Lawrence through purchases made from Beauharnois). Plants on these rivers were unaffected by the lack of rainfall. Forty percent of the Commission's power, however, was derived from plants located on rivers with variable flows. During last fall the sharp and sustained increase in power demand coincided with a marked deficiency in rainfall and consequently riverflow over a wide area of Ontario and Quebec.

Mr. Saunders pointed out that the situation was probably unprecedented. At any rate, it was much worse than that occurring in the previous year. This made the improvement recorded at the present time even more notable. From "run-of-the-river" plants Hydro was now getting a week-day output of 12,410,000 kilowatt hours as against 9,529,000 kilowatt hours a year ago. Taking in unaffected "continuous-flow" plants, the Southern Ontario System was now receiving 35,238,000 kilowatt hours a day as against 30,924,000 kilowatt hours last February.

Improved Water Conditions

Allowing for an increase in the output of the DeCew Falls plant by a permitted additional diversion from the Niagara River during the non-navigation season, the speaker quoted statistics to show that the improvement came almost entirely from the run-of-the-river plants as a direct result of improved water conditions. During the year a new generating plant had been brought into service at Stewartville on the Madawaska River, but the output of this station, too, had been affected by the adverse water situation.

As an example of the improvement of water conditions on variable rivers, Mr. Saunders quoted flow figures from the Hydro plant at Chats Falls on the Ottawa. At this power site the mean flow was 16,806 cubic feet per second for the first week of November, 1948, as compared with 26,741 c.f.s. for the week ending February 20, 1949. For a closely corresponding week of last year the flow was 19,574 c.f.s.

Mr. Saunders concluded his succinct picture of the water situation by expressing on behalf of the Commission sincere thanks "to labour, industry, the housewife, the farmer, the retail merchant, to the girls and boys and to all others who co-operated so wholeheartedly with us." Particularly he wished to express his gratitude to the men and women of the local commissions who had borne the brunt of the work during a difficult period, "meeting your people almost every minute of the day."

Water conditions, the Hydro Chairman stressed, were not the only problems the Commission had to face in 1948. As late as December last the Commission's Engineering Department reported that slow and inadequate deliveries of some important materials were still limiting progress of station projects, while the shortage of certain types of control cable was impeding work at Allanburg, Westminster, Scarborough and Kipling — all important transformer or frequency-changer stations.

Mr. Saunders inferred, however, that this situation might be regarded almost as a favourable one, in view of the comparatively few complaints recorded, when compared with many which had preceded it.

"We needed," he told the delegates, "an average of 1,650 tons of structural

A.M.E.U. Officers 1949

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steel for transmission lines each month for a three-year period until 1951. If this steel were not obtained, then the power generated at Des Joachims, Chenaux, Windsor and LaCave could just not be delivered."

Hydro was in the habit, its Chairman inferred, of looking after requirements of this kind well in advance. For fifteen months prior to March 1948, the Commission had tried repeatedly to improve the supply from all Canadian sources. This effort had resulted in the procuring of only 40 percent of the steel needed.

"It was for this reason," Mr. Saunders explained, "that, in April last, we went to the United States companies. After a conference between Hydro officials and representatives of the United States Export Company, arrangements were made for approximately 1,200 tons of steel per month. The cost to Hydro was higher, but it was the only way out of our difficulties."

Construction Forging Ahead

In spite of the critical lack of materials, the Engineering Department of Hydro had forged ahead. The speaker referred to the 60,000 kilowatt (81,000 hp) plant at Stewartville, to the 40,000 kilowatt (53,000 hp) station at Aguasabon in the Thunder Bay district and to the new 5,600 kilowatt (7,500) hp) unit installed at Ear Falls in the Patricia area as construction projects completed in 1948 in the face of many difficulties. Very substantial progress, he pointed out, had also been made at Des Joachims, Chenaux, Pine Portage, Tunnel Site and LaCave, as also with the plans and surveys for the steam plant at Windsor.

The distribution of power from these plants and the various tie-ins with the existing system had necessitated a corresponding development of transformer stations and transmission lines. Mr. Saunders passed in review the year's accomplishments in this field.

A new frequency-changer station had been constructed at Westminster near London and one of the three units planned placed in operation last November. At the present time, this was handling the 22,500 kilowatts of 60-cycle steam power delivered by the Polymer plant at Sarnia. The installation of a second frequency-changer unit was practically completed at Scarborough and construction of another station, similarly equipped with 25,000 kva changer machinery, was begun at Sudbury. This latter station would be linked up with Hydro's new Tunnel Site development on the Mississagi River by a 124-mile, 115,000 volt transmission line already under construction. Sudbury frequency changers would also be tied in with the Commission's 25-cycle Abitibi power, and distribution at both 25-cycle and 60-cycle frequencies effected throughout Northeastern Ontario.

Coming to rural services, Mr. Saunders noted that last year Hydro power was provided to the largest number of consumers ever served in any one year since the beginnig of the Commission's operations. Similarly, the number of rural lines built established an all-time record. Actually, 3,479 miles of new line were constructed and services given to 26,036 new rural consumers. This compared with 1,007 miles of new line and 20,691 new consumers in 1947.

In 1949, according to the Commission's Chairman, Hydro will be out for new records. The rural program for this year calls for 3,888 miles of new line to serve 39,041 consumers.

"Thanks again to a beneficient Providence in giving us an open winter, we have already completed about 1,200 new miles and have given service to over 9,700 new customers," said Mr. Saunders. "Today we are providing some 229,000 rural services."

Decentralization Program

Mr. Saunders then told his audience about the important work that was being carried out on the administration side, and he discussed at some length the new regional organization that had been set up largely for the purpose of improving relations with the public as far as general operations are concerned. First, he recapitulated the districts and their headquarters. Niagara — Niagara Falls; West Central — Hamilton; Western — London; Toronto — Toronto; Georgian Bay — Barrie; East Central —

PRESIDENT OF the A.M.E.U. for 1949 is J. Clark Keith of Windsor. He is seated above in the centre of the front row, flanked by V. A. McKillop, London, left, and T. E. Teckoe, Jr., of Galt, retiring President. Standing, from left to right, are: N. A. Belfry, Uxbridge; H. A. Howard, Thorold; R. H. Martindale, Sudbury; W. R. Mathieson, Toronto, Secretary-Treasurer; and M. W. Rogers, Carleton Place. Other members of the executive not included in the picture are: Vice-President Robert Butter, Owen Sound; R. S. Reynolds, Chatham; O. H. Scott, Belleville; Norman Grandfield, Brantford; A. E. Fort, St. Marys; R. E. Young, Etobicoke; A. W. H. Taber, Fort William, and George Chase, Bowmanville.



Belleville; Eastern — Ottawa; Northeastern — North Bay; Northwestern — Port Arthur. He explained that the personnel of each of these regions comprised a Regional Manager, Operations Engineer, Accountant and Personnel Officer together with their staffs. Area managers in the various districts of the province formerly handled by rural superintendents would report to the Regional Managers as would also the superintendents of new and isolated generating areas. Besides making closer contacts with consumers, it was pointed out that this decentralization set-up would speed up the Commission's business, with more efficient disposal of all administration matters not concerned with policy.

Cheap Power — Rising Costs

The administration, Mr. Saunders said, had functioned in a truly wonderful manner with regard to the price at which power was sold to consumers.

"We find," said Hydro's Chairman, "that all consumers — both urban and rural, both domestic and commercial— have had a decrease in cost of power per kilowatt hour over the past ten years. Let me give you the figures."

The figures showed that all domestic consumers in cities and towns were paying 1.01 cents per kilowatt hour as against 1.26 cents in 1939. Urban commercial consumers were getting power last year for 1.29 cents a kilowatt hour — they had paid 1.58 cents for it in 1939. Farm consumers were billed at the rate of 1.66 cents per kilowatt hour in 1948 as against 2.56 cents in 1939. Hamlet consumers were enjoying Hydro services at 1.83 cents a kilowatt hour as

(Continued on page 22)

— O.M.E.A. EXECUTIVE 1949 —

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District No. 8—T. A. Cada, St. Clair Beach
G. H. Fuller, Windsor

THIS AFFABLE body is the O.M.E.A. Executive for 1949. In the front row, from left to right, are: Roy Pierson, Brantford Township; R. M. Durnford, Sarnia, Past President; George F. Hutcheson, Huntsville, President; P. R. Locke, St. Thomas; F. H. Plant, Ottawa. Second row: H. R. Henderson, Woodstock; A. G. Jennings, East York; Walter Dixon, Arthur; M. P. Benger, Port Arthur; K. C. McLeod, Stamford Township; Loftus Reid, Toronto. Third row, T. A. Andre, Kingston; K. C. Christie, K.C., Toronto; D. P. Cliff, Dundas, and J. R. Pattison, Fort William.





NEWLY-ELECTED President of the A.M.E.U. for 1949, J. Clark Keith of Windsor is shown in a brief pow-wow with Hydro's General Manager and Chief Engineer R. L. Hearn and Chairman R. H. Saunders.

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RUSS BARLOW, Manager of the Oakville Water and Light Commission, pauses for a chat with another Oakvillian, R. Snowball (back to the camera), and Les Cartwright of Hamilton.





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Jack Mowat, M
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THIS YEAR marked the initial occasion that the banners of the Prescott Public Utilities Commission have been in evidence at the Convention. In company with D. J. McCauley, H.E.P.C., left, Mayor Jack Horan of Prescott, makes some pertinent observations on a picture of LaCave Development to fellow-citizens J. T. Haggarty and George Kerr.





ANOTHER DISPLAY featuring "Black Light" is demonstrated by Ted Dietrich of Hydro's Promotion Department to an interested audience.




Convention

GREAT ACHIEVEMENT

(Continued from page 18)

compared with 3.01 cents in the first year of the War.

"As against this picture of reduced cost of power," observed Hydro's Chairman, "we must examine thoroughly the cost of its generating and distribution. We find that the wages paid by Hydro have increased by some 71 percent over the past ten years. Also, we find that the cost of materials purchased for Hydro operation has increased tremendously."

Mr. Saunders went on to show just how much some of the materials in constant demand for construction had gone up. Hydro officials, he said, were now engaged in a detailed study of the picture to determine whether or not it would be necessary to make a revision in power rates.

The speaker stressed the great benefit of the vast programs upon which Hydro was now engaged to the people of the province and especially to the wage earners. A breakdown of the $74,989,674 spent on material during the last fiscal year showed that 96.5 percent of this money was expended in Canada, of which 94 percent was spent throughout Ontario.

"Your Hydro, gentlemen, is a tremendous organization, I assure you," said the H.E.P.C. Chairman in conclusion. "At the end of December, 1948, the Commission had 17,053 employees, of which 6,479 were regular employees and 10,574 temporary. Hydro paid in 1948 some $37,567,000 in wages."

"My best thanks, gentlemen, are tendered to you of the Commissions and your staffs, who, in your own way and in your own municipalities are doing your part sincerely and well in making your sections of the Province better places to live, work and raise families."

OAKVILLE

(Continued from page 4)

previous afternoons to allow the students at the local schools to attend special showings. On these occassions Hydro representatives were in attendance to answer questions.

Thus Oakville's entry into the Hydro family was marked by a pleasant and informative evening which augurs favourably for the town's future relations with the Commission. That the "Family Party" was such a success is indeed a feather in the collective cap of the Oakville Chamber of Commerce, Mayor Black, Chairman Hillmer Loftquist and Manager Russ Barlow of the local commission and all those who participated to any degree in the event.

Another highlight of the program was the contribution of the members of the Oakville-Trafalgar High School Glee Club. Under the direction of Mr. F. E. Brealey, they gave several selections which merited and won the applause of the large audience.

Rainmaking Not Yet "On Ice"

Discussing Experiments To Date, P. D. McTaggart-Cowan, M.B.E., In Addressing A.M.E.U. - O.M.E.A. Delegates Cautions Against Over-Optimism

COULD man change the weather?

This was one of the major problems confronting meteorologists today, P. D. McTaggart-Cowan, M.B.E., declared during a luncheon address at the joint A.M.E.U.-O.M.E.A. convention in Toronto.

Mr. McTaggart-Cowan, who is Assistant Controller of the Meteorological Division, Department of Transport, in discussing weather control, dealt specifically with induced precipitation or artificial rainmaking.

Describing several experiments in this field of meteorological research, the speaker stated: "It would seem that dry ice is still the best ammunition with which to attack the unsuspecting cloud."

Continuing, Mr. McTaggart-Cowan cautioned against over-optimism in respect to the possibilities of inducing rain artificially. While clouds — and, therefore, precipitation — could be modified by the introduction of certain inoculants, the extent, regularity or areas remain to be determined, he pointed out.

Meteorological research today, also involves another comparatively new branch of endeavour known as hydro-meteorology, he said. "This entails the application of meteorological methods to the correlation of rainfall and snowfall and the catchment, run-off, flood control, as well as water storage potential and related problems."

Outlining the present responsibilities of the Canadian Meteorological Service, the speaker pointed out that this important branch of the Department of Transport — with headquarters in Toronto — consisted of over 1,000 weather observing stations from coast to coast. Information received from these stations by radio, telegraph and teletype from four to 24 times per day was collected at strategically placed forecast offices, he added.

These forecast offices provided weather reports and forecasts for aviation, radio stations, newspapers, industries, commerce and public utilities, marine interests, as well as the general public.

Expansion of the present forecasting service will be undertaken by the Canadian Meteorological Division as soon as possible, the speaker predicted. This would involve forecasting temperatures and precipitation anomalies for five days in advance.

In summing up, Mr. McTaggart-Cowan asserted: "Certainly one can say that great scientific advances are being made."



THESE COMELY chorines salute an appreciative audience at the conclusion of one of their dance routines during the floor show at the joint A.M.E.U.-O.M.E.A. dinner, March 1.

"Great Invisibles and Intangibles"

Material Assets Alone Do Not Assure Happiness, Capt. the Rev. Norman Rawson Tells Convention Delegates — Sees "Fatherlike Attitude" As Cure For Juvenile Delinquency

IN much the same way as a skillful artist uses his paints to weave onto a canvas all the beauty of a sunset and its kaleidoscopic range of colour, the Rev. Norman Rawson of Hamilton used words to weave an epic of oratory when he addressed a joint luncheon of the A.M.E.U. and O.M.E.A. delegates on the subject: "You Can't Go Home Again."

It was an address of laughter and tears —an address which prompted frequent and spontaneous outbursts of merriment. At times, the audience of over 900 in the Royal York's Concert Hall was hushed and many eyes were moist and misty.

One of the all-important points stressed by the speaker was that the greatest happiness in life depended upon the fullest appreciation of "the great invisibles and great intangibles." People had added to their gadgets and comforts and material assets but had failed to take into account these other things, he declared.

Captain Rawson pointed out that it was not enough to have a full pay envelope, a good home and a big bank account. He said in his 38 years in the Christian ministry he had seen men and women with all these things and they were among the most miserable of people. On the other hand he had seen others without all the comforts of civilization and they were very happy and living useful lives.

Continuing, Captain Rawson said that peace and security could not be achieved by placing sole reliance upon the North Atlantic Security Pact. The hope of civilization, he said, was the United Nations standing together and backed by the Atlantic Pact. In this way, if any nation failed to meet the Pact, they would be liable to meet the full fury of the other nations. But reliance on the atomic bomb or the Atlantic Pact for the preservation of peace was not enough.

Mr. Rawson said that if he had his time to live over again he would spend more time making friends and less time making contacts. The man who did not have a friend, he said, was one of the most miserable cusses in the world. What gave value to things was sharing them with mankind.

Another thing, the speaker said, if he had it to do over again, he would devote more time to developing his own children and home and less time to other pursuits. There was no substitute for a good father in a home, he pointed out, and one couldn't delegate the job to mother.

"If you want a cure for your child delinquency or gang problems, I will give it to you," he said. "You won't find it in the strap or in mollycoddling; you will find it in a fatherlike attitude."

The speaker said that parents expected the schools, the Y.M.C.A., and the Church to do the job that they should be doing themselves.

If he had to do it over again, Mr. Rawson reiterated, he would pay less attention to statistics and more attention to sentiment and he didn't mean the sentimentality that one so often found in religion. He thought that because a person had religion didn't mean that they had to be queer, but on the other hand it would be queer if everybody got religion. It was not hard cash, beautiful homes or beautiful factories, he stated, but sentiment that made the wheels go round. You could never make men happy with pay cheques and bonuses alone, the speaker stated, because they wanted to be treated as human beings.

In conclusion Mr. Rawson said if he had it to do over again he would not make success his goal. He thought that they had made a mistake by telling their children that there was room at the top of the heap. They were not all destined for the top, but they were all destined for a full life. "You can't go home again," he said, "but you can build for tomorrow a mansion for all mankind."

MEN OF TREES

(Continued from page 14)

first phase of forestry work.

The forestry course is designed to develop tree pruners first. But whether the learner progresses into the next classification, known as "improver," depends on his diligence and aptitude for the work. The improver class is reached after two years in the field and the successful members of this group are given a month of further instruction in forestry technique back at the Etobicoke Training Centre.

At this stage the forestry "improver" learns about the growth of trees, the root system and many other subjects. On returning to the field, he then works toward the classification of journeyman gaining knowledge in tree surgery. The journeyman class usually is reached after a period of three years of efficient operation in the field.

Beauty Of Countryside Enhanced

The knowledge and skill of able forestry workers are important in relation to Hydro maintenance work and also to the tremendous construction program now in progress. Forestry workers not only clear the way for the transmission and distribution lines which bring power to factory, farm and home, but they do their job in such a way that the scenic beauty of the countryside is enhanced rather than marred.

The work of the forestry man is best summed up in this observation by William Grundy, Assistant Chief Forester, who declared:

"Wherever a Hydro line goes through, the greatest care is taken not to 'butcher' trees."



CONGRATULATIONS ARE extended to the Reverend Norman Rawson of Hamilton by J. F. Linn, Stayner and W. E. Honey of Waterford after Mr. Rawson's address at the O.M.E.A.-A.M.E.U. joint luncheon, March 1.

MEET Terrace Bay!

Hydro Joins Forces With Pulp and Paper Company To Carve Bustling Town Out Of Virgin Bushland



by

Boyd L. Graham
Hydro News

THREE years ago it was only a lonely railway siding, known as Black. Today it is the bustling and picturesque community of Terrace Bay—a model company town with a population of approximately 1,500!

Carved out of the virgin bushland which blankets the north shore of Lake Superior for many miles, this new townsite, 130 miles east of Port Arthur, is an impressive example of what co-operation between a public utility and private enterprise can actually accomplish. For it is Hydro's nearby Aguasabon plant—placed in service during October, 1948—which is now furnishing all the power for the operation of the new bleached sulphate mill of the LongLac Pulp and Paper Company, Limited, as well as providing domestic electric service for the community of Terrace Bay itself.. The mill commenced the first stages of start-up production last fall.

A few years ago there was nothing here to indicate that a joint undertaking of such magnitude would soon transform the rugged terrain into one of Canada's model towns. Vast stretches of unbroken forest lined the steep bank of the Aguasabon River. The LongLac Company simply drove the logs down this river to Lake Superior from its holdings adjacent to Long Lake. The logs were rafted

at the mouth of the river and then towed across to nearby Slate Islands. Here they were loaded on barges and shipped across the lake to the mills of the Kimberly-Clark Corporation (parent organization of the LongLac Company).

To all intents and purposes, transporting logs was the only useful purpose the Aguasabon would ever serve. But, in 1939 when the Commission carried out the Long Lake diversion, a new future loomed for this once-placid stream. Almost overnight it became a fast-moving river, as Hydro engineers diverted the waters of Long Lake southward to Lake Superior.

Then in late 1945, a vast expansion program was undertaken by Kimberly-Clark Corporation, along with its Canadian subsidiary, the LongLac Company, involving among other projects, construction of the bleached sulphate pulp mill at Terrace Bay.

First Surveys In 1945

Thus, in 1945, the first surveys got under way at the power and pulp mill sites. In the interim, since the first surveys were made, approximately $40,000,000 have been expended by Hydro and the LongLac Company on this combined pulp and power development which is generally regarded as one of Canada's largest and finest dual projects. Today, the Aguasabon plant, with a total capacity of 40,000 kilowatts (53,000 hp), is making a vital contribution to the economy of Northern Ontario where industrial expansion is creating increased demands for electrical energy.

You have only to look at Terrace Bay to find an example of the expansion which is taking place in this part of the province!

The townsite (previously there was only the "Whistle-Stop" named Black) was renamed Terrace Bay a little more than two years ago; it took its name from the deep inlet of Lake Superior which the town overlooks and from the terracing effect of the terrain. In the past few months, the dense bush has undergone an ingenious "thinning" treatment, giving way to graceful curving streets lined with comfortable dwellings, ranging in size from four to six rooms. Painted in gay contrasting shades, these neat, small and medium-size houses blend harmoniously against a background of birch and balsam, which have been left standing in order to preserve the original beauty of the townsite.

Terrace Bay comprises 226 of these modern homes, nine of them being tenanted by the families of the operating staff at Aguasabon generating station.

An inspection of the dwellings will convince the visitor that they can vie with any city residence as far as modern conveniences and planning are concerned. Speaking of conveniences, this model town posessess all the modern attributes of a long-settled community. These include, among many things, a 54-room hotel and a public school which incorporates all the best features in construction. At the conveniently located and modern shopping centre, Terrace Bay housewives find ample variety to satisfy their requirements in this shopping area which also includes a dentist's office.

Incorporated Municipality

Further evidence that Terrace Bay has really arrived as a full-fledged town, is the fact that it was incorporated as the "Corporation of the Improvement District of Terrace Bay" in September, 1947. Statutory authority as a municipality is vested in a three-man Board of Trustees.

Social life of the town centres chiefly around the recreation hall where movies are shown five nights a week. Dances and games provide additional entertainment. Another important link in the social life of this community is the weekly newspaper, "Terrace Bay News," also supervised by the industrial relations department. The more athletic members of the community find an outlet for their energies on the modern baseball diamonds during the summer, and the outdoor skating rink or the indoor curling rink in the winter.

Medical service is provided at a 15-bed, temporary hospital staffed by capable doctors and nurses and law enforcement is carried out by members of the Ontario Provincial Police. Daily bus service connects Terrace Bay with Fort William and Port Arthur while the town has also become an important stop on the transcontinental line of the C.P.R.

Other essential services include those furnished by a bank, post office, laundry depot, barber shop and a volunteer fire brigade.

Ranking high in importance is the pumping station, built by the LongLac Company to supply water to the townsite and mill. Situated on the shore of Lake Superior, the pumphouse is equipped with two 800-horsepower motors which are capable of pumping approximately 20,000,000 gallons of water daily, with the mill using almost 17,000,000 gallons of this amount for its operation.

Mill Production

The mill itself—located a mile or more north of the townsite—is considered one of the most efficient of its kind in North America. Incorporating several new process features, it has been designed to produce 300 tons of bleached sulphate pulp per day. This pulp, or kraft as it is sometimes called, is being exported to the parent company's mills in the United States.

Significant in this regard, is the beneficial effect this new industry will have on Canada's trade balance with Uncle Sam. Company officials estimate that American outlets of the Kimberly-Clark Corporation will annually purchase upward of $10,000,000 worth of the output of the Terrace Bay mill.

Involved in this production is the pro-

Des Joachims—77 Years Ago!

MR. S. J. JARVIS of Pembroke, has an interesting story to tell. In an article he sent to the Pembroke Bulletin, he describes a trip he and his father made to Des Joachims 77 years ago.

Because his father had business relations with the Upper Ottawa Forwarding Company, he was invited to travel by their boats and stages to Rapides des Joachims, a supply centre for lumber companies of the Upper Ottawa, at that time. The distance from Ottawa to Des Joachims was approximately 150 miles and in 1871 the journey entailed about 22 travelling hours.

Setting out in the Ottawa-Aylmer horse drawn coach at six a.m., Mr. Jarvis and his 8-year-old son reached the dock in Aylmer at 7:30 a.m., where the "Jessie Cassels" awaited them. After several stops, they reached Pontiac Landing at the foot of Chats Falls.

Here passengers and freight had to portage about three miles by rail to a point above the Falls, where they boarded another steamer, "The Alliance," on Chats Lake. This steamer slowly ascended the Chenaux Rapids, stopped at Gould's Landing, and after a detour by stage, to overcome unnavigable rapids, arrived in Cobden town on the southern end of Muskrat Lake. Boarding the "Jason Gould," the adventures left Cobden after 10 p.m., making the same portage that Champlain had made about 250 years before. At one a.m. they arrived in Pembroke, the last two miles having been covered by stage.

From Pembroke to Des Joachims was a fine example of diversified travel, Mr. Jarvis continues. Leaving Pembroke the next morning, the party entered the "Deep River" section of the Ottawa or Grand River. Passing Oiseau Rock, the captain of the boat invited the young traveller to blow the boat's whistle to hear the echoes. Mr. Jarvis says this was a great thrill for a small boy.

Des Joachims was reached about noon. According to Mr. Jarvis, the only buildings were a few storage houses, with the white rapids situated close by. Mr. Jarvis states that the wharf, where the boat discharged its cargo was situated near the point where Hydro is now building the main dam for the big development.

cessing of over 200,000 cords of spruce, jackpine, poplar, balsam, hemlock and fir every year, thus giving employment to an average of 450 men who, with their families, make up the population of Terrace Bay.

The timber for the operation of the new mill is brought down the Aguasabon and by other routes from the Company's holdings near Long Lake as well as other lakes and rivers in the Thunder Bay region. These holdings cover an area of approximately 5,000 square miles. During the winter months, over 1,000 men are employed in cutting operations on LongLac timber limits which extend 75 miles or more north of the townsite.

Pulpwood supplies floated down the Aguasabon, on reaching the newly created lake above the main dam of Hydro's Aguasabon development, are brought ashore and transported by jack ladder to a long conveyor belt which carries them to stockpiles near the mill. Thus this new lake, in addition to serving as a forebay for the power development, also provides a ponding base for the logs.

This, then, is the story of Terrace Bay! It is, in a sense, a saga of joint effort, for the construction of the major Aguasabon power development, together with the erection of the mill and townsite, marks another long step forward in the development of Ontario's northland.

Once again, Hydro and industry have teamed together in an undertaking that is making an increasingly substantial contribution to the welfare and economy of this great province.



DEEP INLET of Lake Superior (upper left), gave its name to the picturesque townsite. Diminutive customer and canine companion (centre), visit the community shopping centre to make some Christmas purchases. These homes at Terrace Bay (lower left), are tenanted by families of the operating staff at Hydro's nearby Aguasabon plant which supplies all the power to the townsite and mill. The modern, six-roomed school (lower right), provides primary education for the younger inhabitants.











HUGE STOCKPILES (upper left), ensure a steady flow of pulpwood to the bleached sulphate mill of the LongLac Pulp and Paper Company, (lower left) while the company's pumping station (lower right) supplies several million gallons of water daily to the mill and the Terrace Bay townsite.

MODERN IN every respect, these attractive homes at Terrace Bay (shown below), preserve the natural charm of the townsite. Recalling the fact that wild life roamed this area only a short time ago, these bear footprints (right) are one of many novel designs on doorways and porches of the dwellings.







TED JOHNSTON was in the act of clicking the shutter on this foursome when his partner in crime, Burt Heiling, happened by with his camera with this result: From left to right, Ted's victims are: R. H. Philip, Trafalgar Township; R. Snowball, Oakville; Les Cartwright, Hamilton; and C. W. Wilson, Acton.





IN EARNEST consultation during a between-sessions break we found A. W. H. Taber of Fort William and Jamie Smith of Toronto.

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WE PRESUME that the homesick delegation from Niagara-on-the-Lake were in the process of reporting to the home front via long distance when this photo was snapped. Left to right, Mayor Lew McConkey, L. S. Quinn, D. L. Young and J. F. Walsh.



HERE IS the O.M.E.A. Resolutions Committee in high gear: Beginning at the left in the conventional manner (no pun) we have Walter Dixon, Arthur; P. R. Locke, St. Thomas; C. H. Moors, Fort William; W. P. Bolton, Windsor; R. A. Brown, North York; D. P. Cliff, Dundas; G. H. Hutcheson, Huntsville and G. E. Findlay, Carleton Place.

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ST. CATHARINES' Ray Pfaff and C. S. Rickers of Port Dalhousie exchange iron handclasps before the approving eyes of J. A. Williamson of Niagara Falls and A. J. Whitelock, another

Mayor McCallum Honoured

Fellow Hydro Commissioners Along With Civic Government Representatives Join In Tribute

A YEAR to the day after he had become Chief Magistrate of Toronto and, by virtue of holding that office, a member of the Toronto Hydro-Electric System, Mayor Hiram E. McCallum was honoured by his fellow Commissioners at a banquet in the King Edward Hotel, on Friday, February 25.

The function was attended by more than 300 civic leaders, including the municipal councils, municipal Hydro commissioners and Ontario Hydro officials. Loftus H. Reid, Chairman of the Toronto Hydro-Electric System, presided.

Warm tributes were paid to the Mayor by the various speakers who declared that he had performed his duties admirably as head of the municipality and as Hydro commissioner. But it was Robert H. Saunders, Chairman of the Hydo-Electric Power Commission of Ontario, and Toronto's Chief Magistrate prior to Mayor McCallum, who struck the key-note.

"Mayor McCallum practises what he preaches," said Mr. Saunders.

"During the critical power shortage last fall when Toronto Hydro Commissioners appealed to all consumers to conserve electricity, Mayor McCallum reduced the power consumption in his own home by fifty per cent. He set the example for other citizens to follow," he added.

Mr. Saunders thanked the Toronto Hydro Commissioners and the citizens for their co-operation during the critical months and pointed out that it was this kind of cooperation by the various municipalities that enabled Hydro to meet the acute power supply problem.

Greetings from the Premier of Ontario were brought by Hon. George Dunbar, Minister of Municipal Affairs, who proposed the toast to Mayor McCallum.

Brief addresses were given by Reeve W. S. Morgan of Leaside, Mayor J. M. Moffatt of Galt, E. M. Ashworth, General Manager and Chief Engineer of the Toronto Hydro-Electric System, and Bert Merson, Vice-Chairman of the Toronto Hydro-Electric System. The latter also presented Mayor McCallum with an electric razor on behalf of his fellow Commissioners.

Mayor McCallum replied briefly and paid tribute to the men and women in the Toronto Hydro-Electric System who, he said, had served and were serving the city faithfully and well.



TORONTO'S MAYOR Hiram E. McCallum was presented with safety razor and blades as well as an electric razor, by Bert Merson, right, Vice-Chairman on behalf of the Toronto Hydro-Electric System. The blades, it was explained, were for temporary emergencies, such as blackouts.

IMPORTANT ROLE

(Continued from page 12)

In connection with the League's program, 14 schools for inspectors and building contractors were recorded in 1947. Some classes were also held in 1948. This year renewed impetus was to be given to the work of the League. Ten schools were planned for this spring. Public addresses would be delivered in various municipalities, and there would be distribution of the "Red Seal Monthly" and forms and folders setting forth the advantages of adequate wiring. Mr. Merson pointed out, however, that what was required above all was the active and energetic support of the municipal Hydro commissions.

A reference to the work of George Austen, the recently retired Manager of the League was applauded, and the report adopted without discussion.

Licensing Of Electricians

A. G. Jennings of East York spoke in advocacy of the report favouring one type of license for electricians in Ontario. The report was passed on to be dealt with by the proper authorities.

According to the report presented on membership, the O.M.E.A. is now represented by 242 municipalities. Twenty-one new municipalities joined the Association during the past year.

Interest in the Municipal Electric Pension and Insurance Plan continues to grow. The report showed that 2 municipalities had joined up since last year With 3,711 employees now contributing to the pension scheme, insurance to the amount of $10,784,645 was in force, and 241 employees were drawing pensions. Up to date, $956,810 had been paid in death claims.

The report of the Finance Committee, brought in by James Halliday of Kingston, showed a balance in hand of $6,663.40. This comprised $1,663.40 in cash and $5,000 in Dominion of Canada bonds at par value.

Registrations at this year's joint convention of the O.M.E.A. and A.M.E.U. totalled 1,124 as against 1,160 for last year.

Classified Ads

ARTICLES FOR SALE

THREE 10 KVA 4,600/2,300: 575-volt, 25-cycle. [illegible] Available immediately. Apply Springfield H.E.S. c/o Mr. F. P. Stubbs, Aylmer, Ont.

MOTOR and pump: 3 phase, 220 volt, 25-cycle; 1,440 R.P.M.; connected to centrifugal pump; 200 gals. per minute. —Apply Stanley P.U.C., Howard Berry, Manager.

O.M.E.A. RESOLUTIONS

RESOLUTIONS on a wide range of subjects were presented and discussed at the recent annual convention of the O.M.E.A. in Toronto.

One of the resolutions endorsed by the meeting related to the appointment of H.E.P.C. Commissioners. It read as follows:

Resolved that the O.M.E.A. requests the Legislative Assembly of Ontario to amend the Power Commission Act to provide that:

(A) Commissioners of the H.E.P.C. be appointed for a fixed term of reasonable length in keeping with the responsibilities and duties of the Commissioners (not less than 5 years).

(B) Appointment of the individual Commissioners be made at different times and at regular intervals so that at no time would an entirely new Commission be faced with the responsibility of directing the Ontario Hydro Enterprise.

(C) At least one member to have engineering qualifications necessary to deal with the type of engineering problems encountered in the operation of the Ontario Hydro Enterprise.

In a note accompanying this resolution, it was explained that there was no intention of criticizing the present commissioners, and that it was presented in the sincere belief that the changes proposed would provide a better basis for sound long-term policy and continuity of policy than the present method of appointing commissioners.

Daylight Saving Resolution

A resolution supporting the continuance of Daylight Saving through the fall and winter months was endorsed by the delegates against a recommendation of non-concurrence by the Resolutions Committee. It read: Whereas we believe that a continuance of Daylight Saving would materially reduce consumption of electrical energy, the Executive of O.M.E.A. District No. 4 regrets that the H.E.P.C. of Ontario has discouraged this effective means of power conservation.

Speaking to this resolution, Bert Merson, Vice-Chairman of the Toronto Hydro-Electric System, stated that, in his opinion, there was no doubt that Daylight Saving would have helped to save electricity in Toronto during the recent critical power shortage.

Costs of Frequency Change

The delegates turned down a resolution from District No. 1, O.M.E.A. to the effect that the cost of converting 25-cycle consumer and municipally owned equipment in connection with the frequency changeover project should be charged to the 25-cycle areas, "and that the present 60-cycle areas should be charged only with their proportion of cost of converting the generating and transmission equipment owned by the H.E.P.C. and the generating and transmission equipment of the Quebec power companies which is used to generate and supply power to Ontario."

A last-minute resolution from District No. 5 to the effect that notices of increased power loads should be given by Ontario Hydro to the local commissions before more general publication received endorsation. It was pointed out that when the public was notified first and the commissions afterwards, the average consumer was apt to get the idea that there was no longer any necessity for saving power. It was intimated that the additional load permitted by each successive improvement in the power situation was as yet comparatively small, and it was suggested that, if the Commission were first notified and then, after a suitable interval, the public, time would be given for insertion of an advertisement in the local press warning against any extravagant use of power.

A resolution from the Windsor Public Utilities Commission suggesting that contraventions of the regulations by the use of space heaters and other temporary illegal electrical equipment could be prevented, at least in part, by action of municipal councils through their building inspection departments met defeat from the delegates. They felt that it was the business of Hydro to enforce its own regulations.

District Regroupings

On the recommendation of the Resolutions Committee, the delegates decided that it was inadvisable to make any material change in the present O.M.E.A. Districts until more thoroughgoing consideration had been given to tentative plans. At the urgent request of M. E. Dickerson, Chairman of the North Bay

Service Voltage in Ontario

Power Industry Must Take Lead In Attacking Problem of Standardizing Says G. M. McHenry

THE power industry must take the lead in attacking the problem of standardizing service voltage in Ontario, declared G. M. McHenry, of the System Planning Section, H.E.P.C., in an address to A.M.E.U. delegates at the recent annual convention in Toronto.

Urging adoption by the Canadian Standards Association of the 110-125 volt limits recommended by the Edison Electric Institute and the National Electrical Manufacturers Association in the United States, Mr. McHenry pointed out that the standardization problem must be faced sooner or later. Due to the similarity of electrical equipment design in Canada and the States, and the general conditions prevailing in both countries, he predicted that the standards to be adopted here would not be very different from those recommended. Therefore, he added, it would be safe for manufacturers to design equipment, and power suppliers to alter distribution systems to conform to these standards.

Chief obstacle to the adoption of the EEI-NEMA recommendations, he said, was fractional horsepower motors, rated at 110 volts with an operating range of 99-121 volts. Under present conditions, this low voltage was sometimes justified in rural and suburban areas, he stated, but on the other hand it was not advisable to lower the rating of higher-voltage appliances such as incandescent lamps and electronic equipment, because voltage in excess of 125 volts sometimes occur also.

"The solution," he declared, "would seem to be the general adoption of standard limits of voltage variation by power distributors and subsequent revision of design voltages by the manufacturers. For this purpose the EEI-NEMA recommended 'Favourable Zone' (110-125 volts) would be a good starting point as it meets the requirements of all devices of present design except that it permits voltages a little on the high side for 110-volt devices."

Mr. McHenry pointed out that due to errors in the controls of regulating equipment, unpredictable load changes, and other factors, a further restriction of design limits would be necessary to keep the majority of consumers within the Favourable Zone. To accomplish this, he suggested that an additional limit be placed on the voltage spread at each consumer's service, to provide a spread of not more than 10 volts. Voltage regulators at distributing stations will become an almost universal requirement to meet this standard, he added.

In conclusion, Mr. McHenry stated that the problem of voltage standardization had to be attacked on a national basis. "The Canadian Electrical Association has already established a subcommittee to deal with this matter," he said, "and they should be encouraged to expedite this work and be given every assistance. Perhaps the chief contribution any individual can make is to keep an open mind about such things as standard equipment ratings, and to be prepared to accept changes recommended by whatever authority undertakes this standardization program."

Hydro-Electric Commission, the formation of an additional O.M.E.A. district in the North was however agreed upon. Mr. Dickerson pointed out that as the municipalities from Sudbury east were at present affiliated with the Georgian Bay district, delegates had to travel hundreds of miles and lose much time to attend meetings. With all the development that was going on in Hydro, these meetings were likely to be of increasing importance and of more frequent occurrence. Moreover, the Virginia Town and Larder Lake areas were coming into the O.M.E.A. orbit. The importance of a new O.M.E.A. district in the North was, therefore, stressed. Following unanimous concurrence with Mr. Dickerson's suggestion, the draft of officers for the new district will be a matter of automatic routine and acceptance. It is understood that the boundaries will correspond with those of Hydro's new Northeastern regional area.

A resolution calling for an amendment of a clause in the Code Book forbidding plug outlets in bathrooms was adopted after some debate. The amendment would provide for three-point grounded outlets for heaters and regular outlets for electric razors, hairdryers, etc. The favoured resolution will be sent to the Canadian Standards Association for approval.

Another endorsed resolution would make The Hydro-Electric Power Commission of Ontario, in the case of emergency power shortage, responsible for the purchase of additional generating equipment. This in lieu of the purchase being made by individual municipalities.

Protection of Water Resources

It was decided that the Government of Ontario be requested to provide the legislation needed to protect the forests and the water resources of the province so that a continuous and adequate flow of water may be assured to Hydro generating stations in the future.

The delegates readily endorsed a resolution calling for the dissemination of education and information with respect to Hydro and the use of electric power among the school children of the province. It was suggested that the O.M.E.A. Executive and the H.E.P.C. should carry out a closely co-ordinated program, stressing both the use of power and its dangers.

It was agreed that the Resolutions Committee should request the H.E.P.C. to enforce the same power conservation measures, when necessary, in rural areas as in Hydro municipalities.

The meeting went on record in favour of a Pension and Insurance Plan for all municipal commissions and supported a resolution urging that each municipality adopt such a scheme.

A resolution from the North Bay Hydro-Electric Commission to the effect that the activities of the Association be confined to problems affecting the administration and operation of local Hydro commissions was defeated. Meeting the same fate were resolutions suggesting that the H.E.P.C. take charge of fire insurance for the Hydro municipalities, and that a revision of rate structure should be adopted for domestic consumers to discourage the excessive use and waste of electricity.

The question of appointing a full-time manager and secretary for the Association came up for discussion in the form of a resolution after a preview in a debate on the ways and means of increasing the efficiency of the organization. It was decided to leave the definite decision in abeyance. The secretary, however, will be instructed to circularize the municipalities with regard to their opinion in the matter.



Revisions to the constitution of the Association, aimed principally at clarifying the language of certain clauses, were passed without debate, with the exception of one section. This dealt with the right of the honorary president (ex officio the chairman of The Hydro-Electric Power Commission of Ontario), and the honorary vice-presidents to vote as members of the executive. In this connection, a lively discussion arose, and in canvassing the opinion of the delegates, it was necessary to take a standing count. By a small majority, this voting privilege was upheld.

The meeting took occasion to commend the H.E.P.C. both for the tremendous progress in construction accomplished in 1948 and for its creation of better public relations by keeping the people of the province informed about its new undertakings. Congratulations were extended to the management and staff of the Royal York Hotel, to the Entertainment Committee and to the Press. A special little resolution conveyed the appreciation of the O.M.E.A. for the coverage given to its activities by Hydro News.

Accent On Courtesy

Arguments Should Be Avoided Declares W. D. Stalker — Addresses A.M.E.U. Delegates On Public Relations

A DEFINITION of Public Relations as "that branch of administration which promotes customer good-will, confidence, and esteem" was given by W. D. Stalker, Simcoe, who suggested the slogan, "Always be courteous, be fair, be firm" as one worthy of adoption by all members of Hydro staffs.

Mr. Stalker was delivering a paper to the "Town" panel of the A.M.E.U., at the recent annual convention.

Following up his slogan, the speaker declared that inside men should be trained to be courteous in their telephone relations with customers, which are the only direct contact some of them have with Hydro services. Metermen should consider themselves Hydro representatives, and act accordingly and, in all cases, arguments should be avoided if at all possible.

Fairness to all customers alike is essential to good-will, he went on. "The recent campaign to observe Hydro restrictions and conserve power has shown us all that our customers will co-operate if these regulations are enforced fairly and impartially," he declared. "There will be times, however, human nature being what it is, when a firm stand must be taken, but this must not be allowed to deteriorate into bureaucracy."

At the same panel, E. A. Washburn of Ingersoll presented a paper on "Tools and Equipment," outlining the various types of equipment necessary for proper maintenance of satisfactory service. In his opinion, these include a winch truck and derrick, safety equipment including rubber protective devices, pole climbing equipment, testing equipment, and all records necessary for each type of article.

A third speaker, W. E. Swartz of Preston, spoke on "Transformer and Meter Records."

Describing conditions as they are in Preston, he said that all records were kept on cards, on which were noted the serial number of the transformer or meter, the make, date of purchase, cost, location, date of testing, and other data. This information, he said, enabled a small staff to maintain more efficient service than any other kind of recording.

Following the papers, a discussion period was held under the leadership of A. W. Bromley of Kitchener, on the subject of the change from series to multiple street lighting. Opinions expressed indicated that in cases where multiple lighting was to be adopted, the change should be carried out as soon as possible, so as not to conflict with the proposed frequency change-over, scheduled to take place within the next 10 or 12 years.

Major Hydro Programs Reviewed

Key Commission Personnel Address O.M.E.A. And A.M.E.U. Delegates At Joint Annual Meeting

PROGRAMS of new construction and the improvement of electrical services throughout Ontario were discussed by key Commission personnel in addresses delivered at the joint annual convention of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities held recently at the Royal York Hotel in Toronto.

It was pointed out that two tremendous programs were now being carried out simultaneously by the Commission. The first of these was associated with the bringing in of new generating resources and the second with the change-over of the 25-cycle areas in Southern Ontario to 60-cycle. In both cases, and particularly in the latter, the close co-operation of the O.M.E.A. and the A.M.E.U. was stressed as being of the greatest importance.

"Last fall's shortage of power brought the municipalities and The Hydro-Electric Power Commission staff much closer together," Richard L. Hearn, Hydro's General Manager, told the delegates. "A spirit of co-operation was displayed that was most gratifying," he said, and expressed confidence that there would be a continuation of the same fine teamplay.

The General Manager declared that, while he was making no prophesies for 1949-50, the staff of the Commission was leaving no stone unturned to meet the demands for power next year. He reviewed some of the difficulties in getting materials and supplies and declared that, despite these difficulties, 1948 had been a banner year.

It was comforting to reflect, he pointed out, that last year Hydro was able to overcome many of the bottlenecks of 1946 and 1947. With the exception of steel, virtually all problems concerned with material supply shortages were surmounted.

Peak Year Just Ahead

"The 1949 budget target is thirty percent higher than last year," Mr. Hearn noted, "but I feel confident that with the co-operation promised, the challenge to performance will be successfully met.

"This year—1949—is going to be one of the most important years in the history of Hydro. It may be the peak year, or that may come in 1950. We are going to see accomplishments of which I am sure the whole province will feel proud," the speaker declared.

The speaker warned, however, that 1949 was going to be a difficult year with regard to supplying power to meet the increasing demand. Hydro, he said, was facing up to the problem by seeking additional supplementary power from several sources. As an example, he mentioned the orders which had been placed for small steam and Diesel units. These would develop between 60,000 and 70,000 kilowatts. In such ways as this, Hydro was preparing to meet any further emergencies that might arise.

The General Manager expressed thanks to the A.M.E.U. and the O.M.E.A. for the co-operation given last year. He stated that Hydro had endeavoured to keep in close touch with both organizations through meetings and bulletins, and declared that the intention was to maintain that close contact in the future.

Program Greatest In History

Mr. Hearn pointed out that the record-breaking program to which the Commission was committed had necessitated a tremendous increase in staff. Current expenditures were now running at approximately $10,000,000 a month—the greatest in the history of the Commission.

With so many vast programs proceeding, the speaker asked for tolerance and understanding if all the data on what was going forward did not reach the delegates as quickly as they desired. With the help of the O.M.E.A. and the A.M.E.U., Hydro would come through with a program of which they all could be justly proud.

Turning briefly to the subject of steam plants, Mr. Hearn stated that it had been found necessary to go out and get the help of consulting engineers, who were specialists in this type of generation. He said that the services of H. G. Acres and Company, Niagara Falls, had been engaged for the Windsor steam plant, and Stone and Webster, for the Toronto plant. Mr. Hearn declared that Hydro has not enough engineers with the necessary background on steam plants to put the program through on time.

The General Manager also touched briefly on the frequency conversion program and assured the members of the A.M.E.U. and the O.M.E.A. that Hydro would give the municipalities full backing to make the change-over as efficiently and smoothly as possible.

Concluding, Mr. Hearn said that Hydro would seek to establish the best possible public relations between the Ontario Commission, the local commissions and the consumers. He predicted that the same spirit of team play by Hydro and the local commissions, demonstrated last year during the power emergencies, would enable Hydro to meet all the problems in the future successfully.

Must Work As Team

Commenting on the splendid relations and fine co-operation that exists between the Hydro and the O.M.E.A. and A.M.E.U., W. Ross Strike, K.C., Second Vice-Chairman of the H.E.P.C., maintained that all have vital parts to play.

"And it's a team," he declared, "that cannot function unless every player plays his part."

Reminiscing, the speaker recalled that he had looked closely at the tasks and problems facing Hydro in 1945. It was quite evident then that power shortages and other difficulties, such as shortages of materials for projects, would pose a serious problem. And beyond that picture lay the cycle conversion program. He had thought then that it looked like an impossible situation. Yet the Hydro team had tackled all these problems and were solving them.

Mr. Strike stated that the A.M.E.U. and the O.M.E.A. have kept pace with the growth of Hydro. He pointed out that all the problems had not yet been solved, but if the fine teamwork were maintained there was no doubt that all difficulties would be ultimately overcome.

Mr. Strike emphasized that as far as the Hydro Commission is concerned it

(Continued on page 34)

J. J. Evans Passes



A member of the Wingham Public Utilities Commission for the past two years, Joseph James Evans, 80, died February 10 following an automobile accident.

He was born in Roseville, Ontario, and received his education in Plattsville. From 1913 to 1933 he was a foundry superintendent in Cobalt, after which he retired to Wingham.

Actively interested in municipal affairs, he was a member of Council for 10 years, during five of which he was Reeve. He was a member of the Presbyterian Church and of the I.O.O.F.

The late Mr. Evans was predeceased by his first wife, the former Agnes Adams, in 1906, and his second, Janet Orr, in 1946. Surviving are one son, J. H. Evans of Norrie, P.Q., one daughter, Mrs. Agnes Baum of Traverse City, Mich., three sisters, Mrs. Tom Cuthertson, Mrs. John Martin, and Mrs. John Bristow, five grandchildren and one great-grandchild.

Important Arm Of Management

PERSONNEL administration has become an important arm of management, closely associated with top administrative levels, and concerned with all branches of administration in its work.

This view was expressed by W. F. Sutherland, of the Toronto Hydro-Electric System, in a paper which he presented to a panel of the A.M.E.U. at the recent annual convention.

Today, he pointed out, administration was concerned with persons not only as human beings, but also with their jobs in relation to the enterprise.

Mr. Sutherland made it clear that the individual now was regarded as a member of a definite body of people who, together, carried on the work of an enterprise for the production of something, dividing the labour among themselves but working in an integrated pattern and co-operating as a whole.

An organization, he said, was a co-operative structure. According to this aspect of labour, every individual occupied a definite position or job in the scheme of the whole with which he had to be identified. In the work of the whole his job had a status, relative scope or level. The organization aspect of labour thus exhibited a oneness—people in positions or jobs in an integrated pattern, whether managers or routine workers. It showed graduations in authority and level of work but no cleavage into two opposing groups of management and labour or employer and employee as shown by the economic aspect. Therefore, he maintained, it would be seen that they were today concerned with something more than the hiring and training, and the health and welfare of the employee, though these were, and would remain, important aspects of personnel work.

The personnel officer, Mr. Sutherland emphasized, had still to have a broad view of, and an understanding approach to the human relations aspect of the enterprise. In addition, he had also to be prepared to interpret facts and attitudes, and to develop plans and procedures for the knitting together of the organization into one harmonious whole.

Continuing, the speaker pointed out, that there was appreciation of the need for something more than the lines of communication which were established in the line organization for the routine conduct of its affairs. Efforts were being made by the more progressive enterprises toward the building up of sound relationships between employees and management. Here the personnel officer had to facilitate the proper functioning of the line organization while standing apart from it and interfering as little as possible with the responsibilities of those in charge.

The speaker maintained that in giving consideration to the means whereby satisfactory adjustments would be made between men and their work, the general problem could be divided into two major parts. "There is," he said, 'first of all, the fairly specific task of setting up an adequate wage and salary schedule according to the tasks performed, the responsibilities assumed and the working conditions encountered. There is also the task of setting up within the organization means for implementing the classification and for the continuing adjustment of job classifications and employee salaries, to provide for changes in job contents, for increases, and for the transfer of employees from one classification to another as proficiency may warrant and vacancies may permit."

Mr. Sutherland contended that not only was it necessary to set up a classification which was fair and adequate in itself, it was also necessary to integrate that classification functionally into the administration of the utility in such a manner that it would serve as a focal point around which all matters relating to salaries and their adjustments would revolve.

Concluding, the speaker pointed out that the principles to be followed were just the same in the smaller utilities as in the larger ones. Where utilities were not sufficiently large to justify the employment of a personnel director, his work should be carried on by the manager. Mr. Sutherland maintained that these duties were just as important as any other job the manager had to do, and more important than most.

T. D. Berry Dies

T. D. Berry, who died suddenly on March 16 at Barrie, joined the Commission on May 15, 1915, and had served for 32 years as Superintendent of the Eugenia District and for one year as Area Manager in the Georgian Bay Region.

Widely known and respected, Mr. Berry will be remembered, among other things, for his development of the Berry Live Line Insulator Tester and for his method of testing line joints.

Can Become Goodwill Ambassadors

Proper Attitudes Stressed —R. Vanhorn Addresses A.M.E.U. Delegates

A BETTER understanding of a company by the public can be created by proper employee attitudes.

This point was stressed by R. J. Vanhorn, of the Bell Telephone Company of Canada, in presenting a paper on "One Phase of Public Relations" during an A.M.E.U. panel session at the annual convention.

The field of public relations, Mr. Vanhorn said, was very broad, but a line might be drawn between public relations fostered by publicity and public relations fostered by employee conduct. No question need arise as to which should be emphasized since each complemented the other. The aim of any company, he maintained, should be to gain the confidence, good will and understanding of the public and both media could be used effectively in achieving that objective.

The speaker also declared that employees could easily be encouraged to become ambassadors of good will both during and after working hours. In addition, while some form of publicity or advertising was necessary, the old principle "actions speak louder than words" still held good.

"In other words," Mr. Vanhorn said, "What we do is more important than what we say. Surveys indicate that the greater the public's knowledge of a company, and the greater the public's understanding of the company, the greater is the public's use of its goods or services. Hence, it is easy to see the important part that proper employee attitudes play."

Speaking directly to Public Utilities' managers, Mr. Vanhorn insisted that the part tellers and cashiers could play in public relations programs could hardly be overstressed. Over the course of a year, he pointed out, countless contacts were made with customers by that group.

Noting that the various Public Utilities in Ontario send out thousands of bills monthly, many of which are paid over the counter, the speaker pointed out that these were the only contacts with some of the customers. "Their impressions of your organizations," Mr. Vanhorn maintained, "depend entirely on the treatment the customers receive at that time."

"Builder of Canada"

Tribute To Hydro And Hydro Folk Paid By John Diefenbaker, M.P. — Describes Communism As Bloodsucker Of Liberty And Economic Freedom

ONTARIO-born John Diefenbaker, M.P., who made his home in the West, came to Toronto on March 1 and told some 900 delegates attending the joint annual dinner of the O.M.E.A. and A.M.E.U. that "Hydro is a monument to the part that modern business technique plays in our present-day world. Its success has been made possible by the acceptance by you, as individuals, of your responsibility to citizenship far beyond the confines of your regular vocations."

Hydro, Mr. Diefenbaker declared, was a builder of Ontario and of Canada—an organization to which people all over the Dominion owed a debt of gratitude that could never be repaid. . . . Hydro had given to the genius of private enterprise the opportunity for fields of service which would otherwise have been denied and had made for true partnership between State and private enterprise. . . . Hydro had attempted great things and had achieved great things and had extended Canada's industrial development, and all within the lifetime of many of them.



CONGRATULATIONS ARE extended to John Diefenbaker, M.P., right, by Loftus Reid, Chairman of the Toronto Hydro-Electric System, at the conclusion of the former's address at the joint dinner of the O.M.E.A.-A.M.E.U., March 1.

A More Abundant Life

"Your devotion to citizenship," continued the speaker, "has brought to millions of persons a more abundant life; it has made Hydro the right arm of Ontario's economic life and raised the standards of living to the people of the cities and towns and rural districts. Not only have you made available electric power; you have made Canada an industrial power house."

Mr. Diefenbaker said that atomic energy would never have been possible without the advances made in electricity. Man now had it in his power to conquer fear and raise the standards of mankind to undreamed-of levels. That development had made possible, too, mankind's self-destruction.

The speaker then referred to "other kinds of power." On the one hand, he stated, there was the Communists' idea of power that was measured in divisions of manpower. Then, there was the other, the power of free men, the moral and spiritual power that came from people living in freedom.

"We must realize," asserted Mr. Diefenbaker, "that our citizenship makes us the beneficiaries of the service and sacrifice of the lives of our pioneers. We do not appreciate our citizenship when only 30 or 40 per cent of the voters in most municipalities go to the trouble to vote. We do not show that pride in Canada and in being a Canadian when so few take any interest in public affairs. We will never build a power house of freedom in Canada until we understand the point of view of the peoples in other provinces and discontinue national prejudices and a subconscious dislike of Canadians of other racial origins. We will never build a power house in Canada on the basis of superior or inferior citizens, determined by race, creed or colour. We will never build a national power house of Canada if we permit ourselves to be divided by racial curtains, not made of iron, but of misunderstanding, of intolerance and antipathy."

Has Created Blackout

The speaker warned that Communism had today created a blackout in most of Europe. It was drying up the streams of spiritual things and had created the greatest international traffic jam in history.

"Democracy in relation to other nations," he said, "gives that transfusion of hope which liberty and economic help can confer. Communism in relation to other countries has become a bloodsucker of liberty and economic freedom. Democratic nations will give to other nations a free world; Communism confers the police state."

PROGRAMS REVIEWED

(Continued from page 32)

was determined to keep the team going so that consumers would get the best possible service at as low a cost as possible.

"Probably the largest single project and the lengthiest that Hydro has ever undertaken is the frequency conversion program," declared H. H. Leeming, Hydro's Director of Frequency Conversion.

"It involves a total expenditure of $190,000,000 of which $170,000,000 is to be borne by Hydro and $20,000,000 by the various municipalities," he added.

Speeding Up Change-over

Mr. Leeming pointed out that it was originally thought that the program would require 15 years to complete, but it was now believed that it could be accomplished in ten years. The accelerated program placed a very heavy load on an already overloaded Hydro staff, he declared.

Outlining some of the work of the Hydro engineering staff in the conversion program, Mr. Leeming appealed to the delegates to let the Commission know if their respective municipalities needed engineering assistance from Hydro in the change-over program. Hydro was prepared to assist municipalities with its engineering experience. It was absolutely necessary, however, whether conversion were scheduled for a municipality, in the immediate future or five years from now, to let Hydro know at once what engineering assistance would be required.

The Director of Conversion discussed some phases of the change-over program as they affected the municipalities, and stated that the local commissions were responsible for the conversion of their own transformer stations, distribution systems and street lighting. He announced that a field co-ordinating engineer would be appointed in each main area.

Mr. Leeming stated that Hydro had contracted with the Canadian Comstock Company for the work in the field, and that it would be necessary later to place still another field contract.

Giving a brief picture of the vast amount of material that had to be obtained, he said that the flow of that material had to be closely scheduled. Work in the field, he revealed, would be highly mobile.

The speaker concluded by thanking the A.M.E.U. and the O.M.E.A. for setting up an advisory committee which he said had rendered much valuable service.

"It is only with such co-operation and by the manufacturers and municipalities working closely with Hydro that a program of such magnitude as the frequency conversion plan can be carried out economically and with efficiency," Mr. Leeming declared.

Regional Organization

Functions In Relation To Municipalities Outlined By M. J. McHenry At A.M.E.U. Session

A CLEAR, concise outline of the general plan of the Commission's recently-established regional organization was given by M. J. McHenry, Director of Consumer Service, when addressing delegates to the A.M.E.U. convention in Toronto.

Speaking on the subject "Relationship of Regional Office to Municipalities," Mr. McHenry explained that because the Commission now operated to such an extent, from one end to the other of a very large province—from Lake Erie and Lake Ontario to James Bay and Hudson's Bay—a decentralization of the Commission's organization was necessary to ensure a much more rapid and advantageous day-to-day service to the municipalities and consumers generally. This had entailed, he pointed out, the setting up of a number of duplicates of Head Office, Administration Branch, on a smaller scale, at strategic points throughout the province. Each of these nine offices was headed by a Regional Manager who had under his supervision similar divisions to those under the Assistant General Manager at Head Office.

The speaker said the Administrative Branch dealt with day-to-day operations of the Commission and in establishment of the regional organization each office had again been subdivided into four main sections: Operations, Consumer Service, Accounting and Auditing, and Personnel. "Engineering Branch" was responsible for the development of new power sources, design of all facilities necessary to supply power, including service to municipalities and all other consumers, purchasing of material and equipment, research and construction. This Branch was not represented in the regional organization.

From the municipal standpoint it was advisable, Mr. McHenry said, that the specific duties of the Consumer Service Division be considered because this was the main channel of contact between municipalities and the Commission. The Consumer Service had the following major responsibilities: public relations, contacts with municipalities, industries, consumers in the Northern Ontario Properties and rural consumers, sales of power and a general understanding of consumer requirements, inspection of wiring and electrical appliances throughout the province, promotional activities with respect to each of the aforementioned duties.

"In respect to our relations with the municipalities," Mr. McHenry stated, "we are interested in, and, from the standpoint of the Commission, are concerned with municipal reserves and their uses, interpretation of rates and classification of consumers, municipal organization problems, municipal funds and their uses, municipal transforming and distributing facilities, methods of financing, accounting and bookkeeping in municipal corporations, metering equipment, power interruptions and complaints, lighting surveys, promotional, educational and service activities, general liaison and follow-up of municipal needs or requests, and factors affecting future power requirements."

"I would like to be able to say our regional system is a hundred percent efficient," continued the speaker. "You can all realize, however, that this is impossible at the present time." He then went on to say that one of the greatest hold-ups had been the lack of office facilities—that it was difficult to break up existing organization, put it together again and expect efficient operation immediately. He said the reorganized system was showing marvellous improvements in the time it had been operating—things were settling down and the Commission expected in the not-too-distant future to attain the efficiency of operation they hoped to get from this regional organization.

"It is the very definite aim and object of the Commission," he emphasized, "to render to municipalities the maximum of service with the least possible delay. But in that connection let me point out that it takes two parties to effect complete co-operation, and the co-operation and service the municipalities obtain from the regions depends to a considerable extent on the degree the municipal systems avail themselves of the regional organization and consult with the regional offices in carrying out their work."

Dies Suddenly

After more than 37 years of service with the Toronto Hydro-Electric System, William David Corcoran died suddenly on March 15 at his home, 80 McRae Drive, Leaside. A lifetime resident of Toronto, he was well known in electrical circles in that city and in the Niagara peninsula.

For many years Mr. Corcoran was a member of the Electric Club of Toronto, having served as its Secretary for the past 15 years. He was formerly on the Board of Managers of St. John's Presbyterian Church, of which he was an active member. He also belonged to the Stevenson Masonic Lodge.

The late Mr. Corcoran is survived by his widow, the former Effie Woods; a daughter, Mrs. H. K. Brown of Guelph; a son, William Murray Corcoran of Oakville; a sister, Mrs. F. W. Twiss, Leaside; and three brothers, Norman, Ernest and Clifford, all of Toronto.

Factors in Power Shortage

President Of Shawinigan Company Notes Progress Being Made In Overcoming Problems

"THOSE who have criticized electric utility management for power shortages forget two principal factors in the situation: droughts and the lack of construction material. Management could do nothing about the first, and the second was an unavoidable post-war difficulty."

This observation was made recently by James Wilson, President of the Shawinigan Water and Power Company, in an article published in the Montreal Gazette.

Mr. Wilson directed attention to "a low rainfall without precedent" which had aggravated the power supply situation in both Ontario and Quebec. With normal rainfall conditions he believed that there would have been no cut-backs in Quebec and that Ontario could probably have passed the winter with "a few isolated brownouts."

Progress In Both Provinces

It was reassuring, stated Mr. Wilson, to see that fair progress was being made in both provinces toward correcting the problems. He pointed out that in Quebec during the past year, additional facilities totalling 118,000 horsepower had been brought into production to meet the steady post-war increase in demand for power among all classes of consumers. Installations to produce 130,000 horsepower were all but completed and work was started on other facilities for more than 700,000 additional horsepower, including 384,000 on the Upper St. Maurice and a 318,000 horsepower extension of Beauharnois.

At another point in his article, Mr. Wilson said that not only had the day gone when further reductions could be made in the sale prices of electricity. The situation, he declared, had reached the point where there had to be increases in rates.

"During the past decade," he said, "every factor in the cost of producing electricity has risen, without exception. For instance, wages are 60 percent higher than 10 years ago, and materials 120 percent. Taxes are up 137 percent, and fees to governmental bodies have increased 40 percent.

"Those increased costs," continued Mr. Wilson, "are not confined to Quebec; they are common to the publicly owned

(Continued on page 37)



It's Springtime! There is evidence of new life and colour everywhere. Milady steps out wearing a flower-bedecked hat, the clothesline is hung with coloured blankets, the seed catalogue provides interesting reading as each page reveals its gorgeous blooms. To the housewife these reminders invariably create an incentive to swing into action with housecleaning and paint brush.

* * *

When sandpapering a surface to be painted, it is much easier to use the emery paper folded over a small block of wood.

* * *

Before driving tacks into a plastered wall, push the tack in a cake of soap, and the plaster will seldom break or crack.

* * *

When the roof has leaked and stained the ceiling paper, cover the mark with magnesia. Rub the block over the stain until covered and then smooth with your fingers.

* * *

Cut down old stair pads and use to cover the steps of the ladder. A piece of rubber tacked on the bottom of each leg will also eliminate danger of slipping.

* * *

Bind sharp edges on the bedsprings with electrical friction tape. It will adhere to metal better than adhesive tape.

* * *

Moth insurance is one policy that can be taken care of inexpensively. Wash woollens, put in a box with a few moth crystals and seal it with gummed paper tape. It's always a good idea to label each box. Spray mixtures used in mothproofing wooden boxes, pianos and woollens should not be used on fur, silk, cotton, linen or rayon.

Newspapers are much in demand during a cleaning spree. There seems to be little time to read the paper-of-the-day, but the old ones are very interesting as they are spread over furniture and on the floor to protect furnishings from dust and paint.

* * *

When you are using a razor blade for ripping out stitches, cover one side of the blade with adhesive tape.

* * *

Sediment that has dried in a long narrow vase may be removed by steeping with a strong solution of vinegar and salt. The mixture should be left in it a day or two.

* * *

You can patch a tear or open seam in wallpaper with matching paper left over from the original supply. Tear the paper, do not cut it, matching the pattern as nearly as possible. Apply paste to the patch, place over spot and hold clean blotting paper against it.

* * *

Before laying linoleum, always place it flat on the floor in a warm room or in the sun for a day. This makes it much easier to cut and handle.

* * *

Here are a few hints on proper table setting. The water goblet is always placed at the tip of the dinner knife. If a second beverage such as milk or wine is served, it is placed to the right of the water goblet. Fruit juice or tomato juice is set in front of the two goblets to form a triangle.

* * *

All bananas, even those eaten in the tropics, are picked green. If this fruit is allowed to ripen on the tree the flavour is not as nice, the skin breaks open and it rots quickly. By the way, have you tried a banana and peanut butter sandwich recently?

* * *

There are plenty of fish stories being told during Lent, and the one about sardines being smoked goldfish is not true. It is said the name originated from the small herrings caught off the island of Sardinia.

* * *

Pickled trout is a Maritime idea that we should tell you about. Simmer a 4 to 5 lb. trout for 45 minutes, then cover with 6 cups mild vinegar, 2 cups water and 5 tablespoons whole pickling spice. Pour the mixture on while hot, then keep in a cold place. This treat can be stored for a week.

* * *

There is another new shortening on the market which makes bread rolls fairy light and white. (The package can be kept on the kitchen shelf at all times too.) Here is a spicy batch: measure ¼ cup shortening, 1¼ tsps. salt, ¼ tsp. ground mace, 1 tsp. lemon juice, 2 tbsps. sugar into a bowl. Add 1 cup of hot water and stir until sugar and shortening are melted. Cool to lukewarm. Crush a package of yeast flakes in 2 tbsps. of lukewarm water. Add a well-beaten egg and the yeast to shortening mixture. Sift and measure 3 cups of bread flour which is stirred in gradually. Place batter in a large well-greased bowl, cover with a plate and place in refrigerator. In 3 or 4 hours dough will treble in bulk. Punch down dough and cut off small pieces for greased muffin tins. Cover and let rise in warm place. Bake in hot oven of 425 degrees for 20 minutes. These will make good Hot Cross Buns with Butter Icing in a cross design on top.

* * *

Don't try to peel withered carrots. Soak in cold water for two hours and they may become crisp.

BAKED HAM

Choose a small boneless smoked ham; wash it thoroughly in hot water. Make incisions in the meat with a sharp knife and insert small pieces of orange peel. Then make a paste of

1 tbsp. prepared mustard
2 tbsps. margarine or dripping
¼ tsp. black pepper.

Cover top surface of ham with paste. Stud the ham thickly with whole cloves. Place in roast pan; bake in a slow electric oven (325 degrees) until meat is done, allowing 30 minutes per pound. Baste the ham frequently during cooking with a cupful of grape juice.



ARCHITECT'S SKETCH of Windsor Steam Plant.

Work Under Way At Windsor

Main Construction At Steam Plant Site On Detroit River Scheduled To Begin In The Early Spring — Making Excellent Progress In Designing Plant

●

ENGINEERS are making excellent progress with their design for Hydro's new steam plant on the Detroit River near Windsor, Chairman Robert H. Saunders announced recently. Preliminary work at the site is well under way while foundation investigation has been completed. H. G. Acres and Company, Niagara Falls, are consulting engineers on the project.

The first step in actual construction has been taken with the authorization by the Windsor Utilities Commission for the laying of a four-inch water main to serve the plant. This will provide pure water for all normal requirements in the plant, while the millions of gallons required daily for cooling processes will be supplied by the plant's own pumping and filtering equipment. Work is now in progress in connection with the driving of steel test piles to determine soil characteristics of the area where the plant is to be located.

Main construction work is scheduled to begin in the early spring. It is expected that delivery of the two initial generating units will be made in time to enable the Commission to place them in service early in the fall of 1951. Each unit will produce 60,000 kilowatts (80,000 hp), and will operate at 60 cycles.

Orders for two turbine-generators have been placed with English Electric Company, Stafford, England, while tenders have been called for condensers and other miscellaneous equipment. Orders for steam generators have also been placed.

The additional power available upon completion of the Windsor steam plant will be fed into the Southern Ontario System, and is expected to take care of a great portion of the rapidly increasing demand for power which is an outgrowth of Ontario's tremendous industrial expansion.

POWER SHORTAGE FACTORS

(Continued from page 35)

system in Ontario and to systems in all states of the union. In fact, they have become so generally the rule that in many of the jurisdictions outside Quebec, governing bodies have been authorizing upward revisions in rate schedules. At present, on basis of 1939 value, a dollar's worth of electricity is priced at about 38 cents."

Mr. Wilson also noted that further progress had been made toward the technical co-ordination of all the electrical systems that serve the great industrial and agricultural belt of Canada from Western Ontario to Northeastern Quebec. Formidable long-term engineering problems remained to be solved, he pointed out, such as the frequency change-over in Ontario from 25- to 60-cycle and the strengthening of inter-system ties. But, he said, it was only a matter of a few years before an inter-connected grid should be possible extending from Arvida to Windsor, Ontario, into which power could be fed from generating stations on the Saguenay, St. Maurice, St. Lawrence, Lievre, Gatineau, Ottawa and Niagara Rivers.

When that time came, said Mr. Wilson, the corporate integrity of the various systems on those important rivers would not be affected, but each system could have, through interchange facilities, the advantage of the availability of spare power from a neighbour.

In that way, the variations in total output rising from both low and high water conditions could be ironed out, by the reason that, because of topography, variations in flow were not simultaneous as between the various rivers. Thus, both of the provinces and the whole country would benefit.

NO SUPERIORS — FEW EQUALS

Ontario Hydro personnel have no superiors and few equals in the electrical utility industry anywhere on this continent.

This high tribute to Commission employees was paid by Hon. George H. Challies, First Vice-Chairman of The Hydro-Electric Power Commission of Ontario, when speaking in the Ontario Legislature recently.

The Commissioners and the government were aware of that fact for it had been proven time and again, Mr. Challies stated.

"I take advantage of this opportunity," he said, "to pay whole hearted tribute to the loyal, efficient and effective help which the Hydro Commissioners have had from all ranks of the Hydro staff."

Lighter Lines



"You'd look wonderful in a mustache—now will you finish dressing?"

Cannibal chief (to man in boiling pot): You have one last thing to say?

Man in pot (flicking open cigarette lighter): If you'll let me go you can have this.

Cannibal chief: O.K., you win. That's the only one I've seen that'll work the first time.

* * *

"What's the hardest thing about learning to skate?"

"The ice—when you come right down to it."

* * *

Teacher: Who can name a liquid that won't freeze?

Jimmie: How about hot water?



"But if we're here to help others, what are the others here for?"

Desperate for a smoke, Smith went into the local pub and in a loud voice offered a pound to anyone who'd give him a package of twenty cigarettes. No takers. He raised the offer to five pounds, but still no takers. Finally he burst out, "Now look here. I've got a Rolls Royce sitting at the curb outside. Will anyone give me a package of cigarettes for that?"

There was silence for a moment. Then a man in the corner looked up and asked, "What year?"

* * *

Did you hear the one about the French horn player whose toupee fell into his instrument? He spent the rest of the evening blowing his top.

* * *

Two ladies who hadn't seen each other for some time met one day on the street.

"Oh Jane," said Maggie excitedly, "a lot has happened to me since I saw you last. I've had all my teeth out and an electric stove and a refrigerator put in."

* * *

Student: I hear the Board of Trustees is trying to stop necking.

Co-ed: That so? Next thing they'll be trying to make the students stop too.

* * *

It was well on into the wee small hours, and the harassed author was still hunched over his desk, gnawing at his pen.

"Darling," called his wife from upstairs, "aren't you ever coming to bed?"

"Can't," he called back in a worried tone. "I've got the pretty girl in the clutches of the villain and I can't think of a way to get her out."

"How old is the girl?" his wife asked.

"Twenty-two."

"Then put out the light and come to bed," she snapped. "She's old enough to take care of herself."

* * *

Mother (to teacher): But I'm sure she can pass the six-year-old test.

Teacher (skeptically, to five-year-old): Say some words, little girl.

Child: Purely irrelevant words, ma'm?

* * *

This one is better when said out loud: What does the bride think when she's walking into the church?

"Aisle, altar, hymn."

* * *

Lonely baby chick, looking around incubator at unhatched eggs: "Well, it looks as though I'm to be an only child. Mother just blew a fuse."



"My girl friend is dropping in later. I wonder if you'd find occasion to call me T. L.?"

* * *

Two very English types were sitting in their London club, each engrossed in his copy of the Times.

Time passed, and first one put down his paper, then the other.

More time passed. Finally one turned to the other, and said, "I say, old man, I hear you buried your wife."

"Yes," said the other succinctly. "Had to. Dead, you know."

* * *

"Can anyone give me an example of the word 'untouchable'?"

"The guest towel in the bathroom."

* * *

Better to light a candle than to curse the darkness.—Chinese Proverb.



"Beg for it, Rex! Please beg for it!"

Hydro Acquires "Kam" Plant



KAKABEKA FALLS Generating Station.

PURCHASE of the business and assets of the Kaministiquia Power Company at Fort William from the parent Abitibi Power and Paper Company in Toronto, was announced recently by Chairman Robert H. Saunders.

In making this announcement, Mr. Saunders pointed out that the assets of the Kaministiquia Company, which the Commission is acquiring at a price of $5,000,000, include the Kakabeka Falls Generating Station on the Kaministiquia River, as well as storage dams and other associated facilities in the vicinity of the plant.

Located approximately eighteen miles west of Fort William, Hydro's newly acquired plant has a peak generating capacity of 27,600 kilowatts (36,860 hp) it was learned.

Dealing with the financial aspects of the transaction, the Chairman stated that negotiations between the Commission and the Abitibi Company during several months have resulted in an agreement on the stated price of $5,000,000, a price which meets with the approval of the Hydro engineers and their consultants. "In completing negotiations for the purchase of the assets of the Kaministiquia Company and the absorption of its power plant into Hydro's Thunder Bay System," Mr. Saunders stated, "we are confident that many advantages will accrue to the Commission and the many stable industries which the plant now supplies."

With the purchase of the Kaministiquia Plant, Mr. Saunders declared that the Commission was now in a position to amalgamate all the power resources in this part of Ontario. "This controlled operation will serve the best interests of the province," he added.

"In addition, the Commission will have complete control of the water storage and flow of the Kaministiquia River which will be of considerable value when we proceed with the Silver Falls development, several miles upstream," he stated. Continuing, he pointed out that the Commission, as a result of the purchase, will be in a position to use water available in the Nipigon and Kaministiquia River watersheds to much better advantage than would be the case if these waters were controlled and operated by different parties.

The Chairman also referred briefly to the benefits accruing to several large municipalities, including Fort William and Port Arthur, as a result of the purchase.

"These two cities," he stated, "will have, at all times, power supplied through a unified system, sufficient to maintain all of their essential services in case of serious transmission trouble."

In summing up, Mr. Saunders said, "by amalgamating all of the power resources of the northwestern part of the province into one system, we will be able to guarantee better electrical service to all our consumers at the lowest possible cost."

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW JANUARY, 1949	MAXIMUM 20-MINUTE PEAK KW JANUARY, 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System	1,851,064	1,917,441	− 3.5
Thunder Bay System	132,160	116,825	+ 13.1
Northern Ontario Properties	209,010	191,145	+ 9.3
TOTAL	2,192,234	2,225,411	− 1.5
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System	1,725,534	1,727,976	− 0.1
Thunder Bay System	151,760	115,425	+ 31.5
Northern Ontario Properties	213,530	191,400	+ 11.6
TOTAL	2,090,824	2,034,801	+ 2.8

MUNICIPAL LOADS, DECEMBER, 1948

SOUTHERN ONTARIO SYSTEM
NIAGARA DIVISION
(25-Cycle)

	H.P.	Domestic Consumers
Acton	2,032	620
Agincourt	439	184
Ailsa Craig	196	164
Alvinston	179	230
Amherstburg	1,650	813
Ancaster Twp.	631	431
Arkona	132	133
Aurora	2,097	861
Aylmer	1,833	830
Ayr	429	243
Baden	662	171
Beachville	710	173
Beamsville	842	453
Belle River	372	368
Blenheim	864	620
Blyth	282	197
Bolton	316	207
Bothwell	178	204
Brampton	4,171	1,784
Brantford	27,232	4,089
Brantford Twp.	3,622	2,098
Bridgeport	381	212
Brigden	164	135
Brussels	368	273
Burford	441	260
Burgessville	104	63
Burlington	2,726	1,416
Burlington Beach	757	732
Caledonia	572	480
Campbellville	90	60
Cayuga	299	200
Chatham	10,962	4,945
Chippawa	549	413
Clifford	177	141
Clinton	1,102	640
Comber	156	139
Cottam	167	149
Courtright	90	107
Dashwood	184	112
Delaware	133	78
Delhi	1,024	704
Dorchester	201	158
Drayton	156	180
Dresden	717	536
Drumbo	146	100
Dublin	83	66
Dundas	3,837	1,600
Dunnville	1,903	1,142
Dutton	304	244
East York Twp.	18,680	13,555
Elmira	2,015	644
Elora	682	374
Embro	224	139
Erieau	206	234
Erie Beach	21	94
Essex	912	608
Etobicoke	18,429	8,484
Exeter	1,235	611
Fergus	1,842	790
Fonthill	449	340
Forest	765	552
Forest Hill	9,890	3,993
Galt	13,172	4,622
Georgetown	2,461	878
Glencoe	280	231
Goderich	2,486	1,473
Granton	91	90
Grimsby	1,229	711
Guelph	15,238	6,156
Hagersville	1,104	449
Hamilton	146,855	45,670
Harriston	718	398
Harrow	854	381
Hensall	354	233
Hespeler	3,657	892
Highgate	132	112
Humberstone	903	811
Ingersoll	4,304	1,940
Jarvis	228	166
Kingsville	977	692
Kitchener	36,978	9,660
Lambeth	274	160
LaSalle	555	334
Leamington	2,813	1,922
Listowel	1,922	900
London	47,110	21,930
London Twp.	850	547
Long Branch	2,864	1,848
Lucan	356	207
Lynden	194	108
Markham	529	380
Merlin	169	140
Merritton	11,568	1,037
Milton	1,934	623
Milverton	505	286
Mimico	4,438	2,478
Mitchell	1,122	568
Moorefield	94	79
Mount Brydges	156	181
Newbury	74	90
New Hamburg	907	412
Newmarket	2,579	1,215
New Toronto	13,243	2,202
Niagara Falls	12,446	5,367
Niagara-on-the-Lake	1,054	696
North York Twp.	21,888	9,611
Norwich	613	419
Oil Springs	206	117
Otterville	179	174
Palmerston	695	433
Paris	2,696	1,240
Parkhill	385	358
Petrolia	1,192	860
Plattsville	270	126
Point Edward	2,351	392
Port Colborne	2,545	1,762
Port Credit	1,604	711
Port Dalhousie	1,311	758
Port Dover	906	875
Port Rowan	165	420
Port Stanley	716	948
Preston	5,306	1,817
Princeton	148	105
Queenston	174	85
Richmond Hill	1,012	485
Ridgetown	750	648
Riverside	2,346	1,860
Rockwood	211	189
Rodney	231	290
St. Catharines	31,635	9,406
St. Clair Beach	154	129
St. George	274	185
St. Jacobs	410	142
St. Marys	2,299	1,169
St. Thomas	10,317	4,920
Sarnia	13,770	5,880
Scarborough Twp.	11,394	7,837
Seaforth	1,489	576
Simcoe	3,314	1,803
Smithville	675	196
Springfield	131	121
Stamford Twp.	5,132	2,942
Stoney Creek	668	289
Stouffville	611	458
Stratford	8,812	4,777
Strathroy	2,027	890
Streetsville	731	227
Sutton	439	502
Swansea	4,216	2,190
Tavistock	806	316
Tecumseh	784	794
Thamesford	348	160
Thamesville	320	273
Thedford	214	185
Thorndale	144	88
Thorold	4,169	1,471
Tilbury	1,336	632
Tillsonburg	2,583	1,343
Toronto	429,873	156,033
Toronto Twp.	8,100	3,914
Wallaceburg	7,496	1,710
Wardsville	97	75
Waterdown	473	291
Waterford	646	448
Waterloo	8,001	2,586
Watford	563	324

MUNICIPAL LOADS, DECEMBER, 1948

	H.P.	Domestic Consumers
Welland	11,408	3,330
Wellesley	214	149
West Lorne	724	265
Weston	6,010	1,815
Wheatley	442	263
Windsor	59,664	27,603
Woodbridge	1,272	345
Woodstock	11,402	3,704
Wyoming	231	185
York Twp.	34,378	23,837
Zurich	210	168
(66⅔-Cycle)		
Bronte	319	244
Oakville	3,151	1,285
Trafalgar Twp.	1,248	661

GEORGIAN BAY DIVISION

(60-Cycle)

Alliston	744	478
Arthur	331	272
Bala	162	336
Barrie	5,863	2,787
Beaverton	361	365
Beeton	183	159
Bradford	536	322
Brechin	50	66
Cannington	362	279
Chatsworth	166	123
Chesley	839	490
Coldwater	188	164
Collingwood	3,369	1,759
Cookstown	157	138
Creemore	216	194
Dundalk	339	232
Durham	596	499
Elmvale	244	210
Elmwood	162	89
Flesherton	147	145
Grand Valley	232	202
Gravenhurst	1,964	780
Hanover	1,992	944
Holstein	38	68
Huntsville	1,740	813
Kincardine	1,100	810
Kirkfield	43	41
Lucknow	509	340
MacTier	168	128
Markdale	346	238
Meaford	1,118	831
Midland	5,698	1,826
Mildmay	252	211
Mount Forest	772	538
Neustadt	87	136
Orangeville	1,236	803
Owen Sound	9,573	4,185
Paisley	243	227
Penetanguishene	1,539	910
Port Carling	189	211
Port Elgin	729	590
Port McNicoll	150	261
Port Perry	491	420
Priceville	25	48
Ripley	158	135
Rosseau	52	71
Shelburne	428	337
Southampton	712	644
Stayner	412	333
Sunderland	203	163
Tara	194	175
Teeswater	296	245
Thornbury	164	278
Thornton	61	71
Tottenham	113	173
Uxbridge	565	478
Victoria Harbour	139	297
Walkerton	1,479	801
Waubaushene	197	260
Wiarton	691	506
Windermere	43	74
Wingham	1,319	643
Woodville	160	129

EASTERN ONTARIO DIVISION

(60-Cycle)

Alexandria	525	510
Almonte	821	718
Apple Hill	50	78
Arnprior	1,888	993
Athens	189	220
Bath	84	83
Belleville	10,721	4,142
Bloomfield	208	192
Bobcaygeon	236	425
Bowmanville	4,181	1,247
Braeside	314	100
Brighton	788	614
Brockville	9,143	3,339
Cardinal	471	408
Carleton Place	2,464	1,173
Chesterville	640	273
Cobden	310	198
Cobourg	3,638	1,545
Colborne	388	299
Deseronto	388	428
Finch	167	134
Frankford	301	262
Hastings	228	284
Havelock	322	316
Iroquois	444	337
Kemptville	665	425
Kingston	21,159	8,962
Lakefield	718	432
Lanark	172	198
Lancaster	97	133
Lindsay	4,296	2,405
Madoc	511	347
Marmora	218	279
Martintown	73	68
Maxville	181	196
Millbrook	210	200
Morrisburg	621	465
Napanee	1,856	979
Newcastle	389	159
Norwood	339	247
Omemee	273	198
Orono	184	199
Oshawa	21,791	7,374
Ottawa	40,493	16,317
Perth	2,370	1,200
Peterborough	23,210	8,283
Picton	2,069	1,254
Port Hope	3,839	1,590
Prescott	1,618	851
Renfrew	862	1,501
Richmond	135	105
Russell	139	129
Smiths Falls	4,607	2,360
Stirling	588	305
Trenton	8,033	2,037
Tweed	510	366
Warkworth	128	162
Wellington	369	370
Westport	153	174
Whitby	2,089	1,163
Williamsburg	147	96
Winchester	624	316

THUNDER BAY SYSTEM

(60-Cycle)

Fort William	22,405	8,379
Nipigon Twp.	647	329
Port Arthur	30,000	7,257

NORTHERN ONTARIO PROPERTIES

Nipissing District
(60-Cycle)

North Bay	7,756	3,809

Patricia District
(60-Cycle)

Sioux Lookout	800	613

Sudbury District
(60-Cycle)

Capreol	696	463
Sudbury	14,566	9,122



HYDRO News



PYLON OF POWER

VOL. 36 MAY, 1949 NUMBER 5

Dream of 1864 Fulfilled

THE recent entry of Newfoundland into Confederation with Canada has served to focus attention upon this island of 42,000 square miles, the world's tenth largest island, and its 320,000 inhabitants.

In becoming Canada's tenth province, in March 1949, Newfoundland fulfilled a dream which began as far back as the Quebec pre-Confederation Conference in 1864, and which was provided for in the terms of the British North America Act of 1866.

Newfoundlanders are generally thought of as a "hardy race of fishermen," and to a great degree this is correct. Since the discovery of the island in 1497, and the subsequent reports brought back by its discoverer, John Cabot, the fishing industry has been its chief source of income. Conducted on the Grand Banks and off the coast of Labrador, its main catch, cod, and other varieties of fish, are exported largely to Canada and the United States.

Although fishing is the chief industry, within the last few decades mining and the manufacture of pulp and paper have assumed an increasingly great importance in the island's economy. Taking advantage of the 25,000 square miles of forests, chiefly spruce and fir, industrially-minded Newfoundlanders have built pulp and paper mills and engaged in the production of newsprint and other paper products. The two big centres of this industry, Grand Falls and Corner Brook, are among the most modern of Newfoundland's communities, and have helped considerably to raise the standard of living of the island. The mills and the communities are provided with electricity from two power plants. One, owned by the Anglo-Newfoundland Development Company, develops 54,000 horsepower, and the other, owned by the Bowaters Company, generates 147,000 horsepower.

This is by no means the full development of the island's power potentialities. It is estimated that between one and two million horsepower are available from Newfoundland's 700 rivers, though at the present time the installed turbine capacity totals only 260,000 horsepower.

Rich deposits of iron ore have been found in Newfoundland, as well as copper, lead, zinc, limestone and fluorspar. Most of the iron ore is exported to steel mills in Sydney, Nova Scotia, and fluorspar is also sent to Canada for the production of aluminum. It is believed that much of the island's mineral wealth is as yet untapped, as is the case in Labrador. In the 110,000 square miles of Labrador are also great timber resources and tremendous power potentialities, the greatest of which is at Grand Falls on the Hamilton River. From this source alone it is estimated that more than 4,000,000 horsepower can be developed.

During World War II, Newfoundland played an important part in the defence of North America, by virtue of its strategic position between that continent and Europe. Besides furnishing manpower, it provided air bases at Gander, Torbay, and Goose Bay in Labrador, and naval bases at St. John's and Argentia, which facilitated troop and supply movements between the two continents.

A new and greater destiny has been predicted for Newfoundland as she marches on to new horizons in company with the people of all other provinces in Canada.

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER SHOTS

CLEARLY silhouetted against a sun-tipped cloud bank, the transmission tower depicted on the front cover this month was taken by Hydro News' photographer J. Burt Helling during a recent visit to Kipling Transformer Station. Mr. Helling also succeeded in capturing Ontario's rural charm in the illustration on the back cover.

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MAY, 1949

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ASSEMBLING REGULATING structures for the 115,000-volt, 25-cycle transformers at Hydro's Kipling Transformer Station.

AN IMPRESSIVE PICTURE

IF it were possible, through some form of magic, to take a motion picture of Ontario's entire area of 412,582 square miles so that the province, as a whole, could be projected onto a standard theatre screen, one of the predominating highlights of such a picture would be the diversified and highly accelerated Hydro activities which are taking place in widely scattered parts of the province at this time.

Such a picture would bring into perspective the immensity of the present $400,000,000 construction program, not to mention the $200,000,000 frequency change-over program which is now under way in a number of Ontario's 25-cycle areas.

As one's eyes followed the Ottawa River, the tremendous activity at the Des Joachims, Chenaux and LaCave sites would be noted, particularly at Des Joachims where work is well ahead of schedule on the construction of the 358,000-kilowatt (480,000 hp) development which, when completed, will be second in generating capacity only to the Queenston-Chippawa plant.

On the Nipigon River, upstream from the Cameron Falls and Alexander plants, one would see the important 60,000-kilowatt (80,000 hp) Pine Portage development taking shape. And then, the progress at the 42,000-kilowatt (56,500 hp) Tunnel Development on the Mississagi River, about 23 miles from Thessalon, would be noted. Another point of interest would be the work now proceeding at the new steam plant on the Detroit River near Windsor—a plant whose initial capacity will be 120,000 kilowatts (160,000 hp) and whose utlimate capacity will total 240,000 kilowatts (320,000 hp).

The picture would also bring into focus the 250-acre area on the western boundaries of Toronto where the new Kipling transformer station is located and where the Commission's service centre is now being established, including a modern service garage and storage space for materials, ranging from needles, snowshoes and nuts and bolts to great transformers and miles of wire.

In looking at the picture, one would also note the miles and miles of new transmission, distribution and rural lines which have been, and are being built, and also the new transformer and frequency-changer stations which have already been constructed.

One important objective which would be achieved by such a picture would be to show the very vital and increasingly important contribution which Hydro is making to the onward march of Ontario as a whole, by providing more and more essential power for the factory, the farm and the home.

SIGNIFICANT DATE

MARCH 31, 1949, will be chronicled among the highly significant dates in the history of Canada, marking, as it did, the entry of Newfoundland into Confederation as the tenth province of the Dominion.

It goes without saying that the people of the other nine provinces join in giving expression to a very sincere and warm welcome to a people who, for years, have been good neighbours and who are now brother and sister Canadians.

Hydro News associates itself with the many Canadian publications which have recorded the union of the world's tenth largest island with Canada and have paid many fine and well-merited tributes to the qualities of the people of that island.

Fishing has been the principal industry of Newfoundland which occupies an area of 42,000 square miles. In recent years, however, other important industries, such as newsprint and mining, have been coming to the fore. From the standpoint of power, Newfoundland has at present an installed turbine capacity of 260,000 horsepower. It is estimated, however, that between 1,000,000 and 2,000,000 horsepower can be developed at various sites on the island's 700 rivers.

In nearby Labrador, which has an area of 110,000 square miles, it is of more than passing interest and significance to note that there are very great power potentialities. On Grand Falls on the Hamilton River, for example, potential power resources are estimated at approximately 4,000,000 horsepower.

The harnessing of that power is likely to be an all-important factor in developing natural resources and many associated industries in both Labrador and Newfoundland.


FLYING
PATROLMEN

by
John A. Murphy
Hydro News

Commission Sees Aircraft Speeding Up Checks On Isolated Transmission Lines As First Inspection Flight Completed In 18½ Hours' Flying Time — In Regular Use With Several U.S. Power Firms

LINEMEN patrolling the thousands of miles of Hydro transmission lines throughout Ontario may soon be discharging a good portion of their normally rigorous duties from the plexiglass cockpit of a helicopter, looking down instead of up.

The possibility of these unique little aircraft becoming a regular part of the Commission's Line Maintenance operations has been under investigation for some time. They have reportedly been used with considerable success by several power companies in the United States, and Hydro engineers are giving full consideration to the practicality of their being similarly employed in Ontario. Although reluctant to make extravagant claims with the experiments not yet completed, members of the Operations Division feel that the aerial innovation has definite possibilities.

Recently a preview of the helicopter at work was given for representatives of the press and radio at Islington Service Centre on the eastern outskirts of Toronto. The site was ideal for demonstrating the type of flying required because of the proximity of transmission towers leading into the neighbouring Kipling Transformer Station.

When the party arrived by bus and car from Toronto the helicopter, a Bell two-seater, was parked near the entrance to the Service Centre, in a small clearing enclosed on all sides by roads, railway tracks and transmission lines. When Hydro Chairman Robert H. Saunders climbed into the plexiglass "bubble" that is the nerve centre of the airborne "eggbeater," Pilot Al Soutar made an almost vertical ascent, and, after a rapid circuit around the power lines bordering the property, brought his machine in to a landing on virtually the same spot from which he had taken off. One would almost imagine that the takeoff and landing were accomplished through the medium of an invisible elevator shaft.

Second passenger to take a "flip" was General Manager and Chief Engineer Richard L. Hearn, who was heartily in accord with Mr. Saunders that it was indeed quite an experience. From that point on, Al Soutar was host to a succession of interested passengers in his flying office, answering the many queries on speed and performance as he deftly manoeuvred his little craft off the ground, around the neighbouring terrain and then touched down on the point of takeoff. To anyone accustomed to the sensation of forward speed experienced in conventional aircraft, their first flight in a helicopter is something to be remembered. Soutar, incidentally has had considerable experience in both types of flying, being a former R.C.A.F. photo-reconnaissance pilot and also is thought to have more helicopter time than any pilot in Canada, well in excess of 600 hours.



PILOT AL SOUTAR engages in a pre-flight chat with Chairman Robert H. Saunders (left), and Richard L. Hearn, General Manager and Chief Engineer, at the demonstration of the helicopter at Islington Service Centre.

Preliminary Flight

The first occasion on which the Commission used the helicopter on line patrol was for a short flight from Toronto to the transformer station at Burlington. However, the first flight that might be called a regular patrol was made from Leaside Transformer Station at Toronto with an experienced Line Engineer in the observer's seat. Route of the flight was along the 220-kv. line to the interprovincial boundary at Quebec, then north to Chats Falls on the Ottawa River, and thence back to Leaside. Landings were made at Gananoque, Alexandria, Ottawa and Madoc. A service truck manned by two mechanics accompanied the patrol by road to effect any maintenance and serve as an emergency refuelling depot.

All in all, this first inspection covered 650 miles of transmission line in 18½ hours' flying time. Officials of the Operations Division estimated that an inspection of the same area from the ground would require 26 men working a total of 600 man-hours. The territory is divided into

(Continued on page 7)

TWO HYDRO engineers vitally interested in the performance of the helicopter on line patrolling are T. J. Burgess, Senior Line Maintenance Engineer and his assistant G. L. Rous, shown here with Al Soutar, former R.C.-A.F. pilot who handled the aircraft on its preliminary flights for the Commission.



PHOTOGRAPHS BY E. A. JOHNSTON.



CENTRE SHOT was taken as the helicopter came in for a landing after one of the brief demonstration flights at Islington. The passenger on this occasion was the noted radio newscaster Jim Hunter.



TWO TYPICAL views of the "flying egg-beater" (below) on patrol near the 220-kv. transmission lines that run from Chats Falls on the Ottawa River into Leaside Transformer Station at Toronto.



FLYING PATROLMEN

(Continued from page 5)

13 "patrol beats," each covered by a two-man team equipped with a service truck. During the winter months the linemen frequently take to skis and snowshoes to get to the more inaccessible parts of their areas. In these instances the superiority of the 'copter becomes apparent.

After the initial patrol, the scene shifted to Northern Ontario, where the first leg was flown from Sudbury to Timmins. From there the patrol went to Hunt, Abitibi Canyon, Kirkland Lake, Cobalt and Crystal Falls before returning to its point of origin at the Nickel City. The total of miles flown on transmission line inspection was thus raised to 2,700.

Many Advantages

As well as the obvious advantages of gaining access to isolated areas, aerial line patrol has brought to light other salient features: Flashed insulators were readily spotted from the air by their discolouration. Frequently, detecting this fault from the ground is most difficult unless the equipment is actually shattered Damaged conductors and ground wires were also noticed from the air. At one point, while inspecting a stretch of line near Crystal Falls, the observer noticed a broken strand of wire in the middle of a span between two towers. This particular fault had been causing trouble for some time but had managed to escape detection from the ground as it was located on a part of the line spanning a small canyon. However, from the helicopter it was noticed at once. On another occasion several broken insulators were reported by the flying lineman whose all-seeing eye, or eyes, picked out punctures on their tops, hidden from the gaze of anyone on the ground.

Cruising speed for this type of operation has been found to be 30-35 miles per hour, about 20 feet above the tops of the towers and 50 feet to the side of the right of way. This latter measure is necessary to ensure sufficient clearance of the rotor blades, which on the Bell 'copter are 37 feet in diameter.

Tried In U.S.

The idea of using helicopters on transmission line inspection was initiated by a trio of California power companies in 1947. The three, the Los Angeles Department of Light and Power, Pacific Gas and Electric Company and Southern California Edison Company, have made it a regular part of their transmission line service, and average about 1,200 miles of patrols flown per month. A certain measure of success has been obtained in night flying on emergency calls. For this purpose a movable spotlight was attached to the aircraft's nose. At 50 feet it was possible to pick out insulator strings and deflections of wire in the tower structure.

Another major consideration in the use of the helicopter is the possibility of flying men and materials in on a shuttle system to effect emergency repairs. Due to the "on a dime" landing requirements of the machine it could land on the right of way immediately beside the trouble spot.

Whether the helicopter will come into widespread use in Ontario will be decided in the light of further results from subsequent flights. Devices being developed in Hydro's Research Laboratory may revolutionize techniques for detecting transmission line faults. However, it is quite possible that regular helicopter patrol may be adopted by the Commission as another organized improvement in the ever-changing phases of generation and transmission of electrical power.

LIGHTS ON IN LONDON

On April 2, 10,000 electric street lights went on in London, England, heralding the brightest month since pre-war days. Flood-lit store fronts beckoned to people accustomed to darkened streets for years, while lights in other large cities and towns blazed once more.



NEWLY-APPOINTED EXECUTIVE COMMITTEE of the Electric Service League of Ontario is pictured here. Back row, left to right: M. J. McHenry, Director of Consumer Service, H.E.P.C.; Jack Mowat, Acting Manager, Electric Service League; A. V. Armstrong, Amalgamated Electric Corporation; Bert Merson, Vice-Chairman, Toronto Hydro-Electric System. Front row: L. L. Hartman, Milwin Radio and Appliances; H. H. Gardiner, Masco Electric Co. Ltd.; James A. Blay (Chairman), Manager of Promotion, H.E.P.C.; Norman Franks, Canadian General Electric Company.



ANDREW CLARK discusses with Tom Burnett and I. Hicks the presentations to be made at the Hydro Construction Division's convention luncheon. C. Martin and Chester Jones are shown on the right.

Construction Nearing Peak

Work On Power Projects Making Excellent Progress Commission's General Manager R. L. Hearn Tells Construction Department At Annual Convention — Addresses Reflect Record-Breaking Activities

by
Harry M. Blake
Hydro News



"WHAT'S THE answer, fellows?" C. Ramey (glasses) proposes a hypothetical Hydro construction problem to R. C. Lane (left), Jack Ryder and C. Martin.

CALLING for team-play and co-operation of the highest order, R. L. Hearn, the Commission's General Manager and Chief Engineer, told Hydro construction men—at their recent annual convention held in the King Edward Hotel, Toronto—that activities associated with present programs of expansion and development were now approaching their peak. The Commission, he said, confidently expected an all-out effort to be put forward during the coming months that would eclipse even the achievements of 1948.

In an informal talk, following words of welcome to the gathering from David Forgan, Director of Construction, Mr. Hearn praised the work carried out by the Construction Division in previous years. Its record of accomplishment, he said, went back a long way. Without the solid foundations it had built in the past, it would have been impossible for the Commission to have undertaken the tremendous programs upon which it was now engaged. Since the war, the Division's principal problem had centered in a growth of staff sufficient to handle the heavy burden imposed upon it. In order to get on with the projects planned to meet the unprecedented demand for power, it had been necessary to let contracts for some of the undertakings. During the past year or two, however, the strength of the Construction Division had rapidly increased. Today, in the different departments, there were some 9,000 men enrolled. This meant that most of the new construction tasks could now be handled by the Commission without

assistance from outside sources. There was one exception. That was with respect to steam plants. In this type of construction it had been deemed advisable to secure the services of consulting engineering firms and contractors.

Good News For Many

Mr. Hearn had good news for many men in the Construction Division who have hitherto been employed on a temporary basis without sharing in the pension plan and other privileges of the permanent staff. Providing "temporary" men are approved by the Commission as having adequate past service and can meet certain other qualifying requirements, they will be dealt with on a similar basis to permanent men during their continuation of service.

John Dibblee, Director of Personnel, described this measure in greater detail. He explained that the primary requisite for elegibility as a "regular" was two years of continuous service. In addition, the man must have the prospect of at least three years of service beyond that time. He must also be above the average in character and have given proof of his loyalty and reliability, and must be willing to go anywhere as required. Men meeting these requirements would participate in the pension plan, be entitled to sick benefits and to statutory holidays and vacations with pay.

It was pointed out that "regular" status did not imply that a man was entitled to a position with the Commission until retirement age. It was impracticable, Mr. Dibblee explained, to guarantee this, since the number of Hydro employees engaged in the construction division was subject to fluctuation according to the projects and developments in hand.

Earlier in the day, W. E. LeClaire, Superintendent of Catering, had drawn attention to the kind of food Hydro serves in its construction camps. Provided at a price per meal far below that which could be set by any commercial appraisement, it is of as good quality as that obtainable in the best hotels and restaurants. And a man can have as much of it as he likes! Last year, Mr. LeClaire pointed out, no less than 5,543,676 meals were served to an average of 4,968 men. With the shrewdest buying at wholesale prices, this food had cost the Commission $2,145,048, or 38.7 cents a meal. And this did not include the cost of construction of dining-halls, the equipment of nine cafeterias, and the wages paid to cooks, kitchen staff and waitresses.

Coming in from the new Pine Portage development on the Nipigon River, L. G. Gallagher, Hydro's Superintendent at this project, was next introduced by the session chairman, George Marley. Mr. Gallagher drew attention to the new mechanical equipment employed. He suggested that some system of training should be introduced for the men assigned to the operation of this unfamiliar equipment and also advocated its standardization on major construction jobs.

Newfoundlanders In Hydro

Hailing from the town of Bona Vista in Newfoundland, Ike Hicks, now one of Hydro's line supervisors in the Eastern Division, brought greetings from the many Newfoundlanders employed by the Commission. Mr. Hicks was greeted with an outburst of applause, and attention was drawn to the fact that the Construction Division was holding its convention almost at the moment that Newfoundland was entering Confederation with the Dominion.

Speaking at the luncheon, W. Ross Strike, K.C., Second Vice-Chairman of the Commission, referred to the cost of the construction programs which Hydro was undertaking. The budget for the Construction Division this year, he said, was approximately $112,000,000. This was a very large sum, but it was commensurate with the tremendous tasks upon which the Commission was engaged. "We must get on with the job," said Mr. Strike. "We realize that electricity is the only source of natural energy we have in Ontario. The whole economy of the province is based on Hydro power."

Money Must Be Well Spent

Apart from building up adequate power resources for the people of Ontario, the expenditures on Hydro undertakings, Mr. Strike pointed out, would materially contribute to maintaining a high level of employment. The number of man-hours involved in present Hydro undertakings was almost unbelievable, and apart from construction crews, the largest percentage of workers was employed in basic industry.

In spite of the benefits, present and future, to be derived from the expenditures on Hydro construction, Mr. Strike sounded a note of warning. Large sums



BILL McKENZIE'S surprise and delight at receiving an automobile from his colleagues in Hydro's Construction Division are witnessed (left to right) by Harold Gemmill, Jack Mills, Jack Ryder, Jim McDonald and George Ayres.



CONSTRUCTION MEN are listening to W. E. LeClaire's report on the quantities of good food consumed in Hydro camps. Hydro's General Manager, R. L. Hearn, and Director of Construction, D. Forgan, are seen in foreground.

of money were involved and care must be taken to see that they were used to best advantage. He appealed to the engineers, supervisors and foremen of the Construction Division to see that there was no waste of material and man-power on the jobs and that, commensurate with good workmanship, every possible economy was practised.

"Let us carry to completion, with a high sense of duty, these great undertakings. Then, when we have finished, we shall have erected a fitting and enduraible monument to our memory."

"He's A Jolly Good Fellow"

Featuring the luncheon period, with John Stark presiding, were presentations to William McKenzie, who is retiring after 39 years of service, and to eight other members of the Construction Department who had just completed their twenty-fifth year with the Commission. These were Miss K. Behenna, Miss L. Hutt, Harry Ayres, James Stewart, Henry Brown, Sam Hanchuk, Larry Fellman and Joe Findlater.

"Andy" Clark had affectionate words of greeting for "Bill" which voiced the sentiments of all present, and as Mr. McKenzie rose to receive from the hands of Mel Hare and Jack Ryder the miniature replica of the motor car which awaited him outside the hotel, the reception given him can rarely, if ever, have been surpassed in the long history of the Commission. It was an affecting scene and significant of the regard that a man of character and goodwill can inspire among his fellows. For many years now Mr. McKenzie has been in charge of line construction, and while nobody will believe that he is entirely lost to Hydro, his absence on the construction front will be keenly felt.

A Busy Department

At the afternoon session, with Bill Olinoski in the chair, Horace Beck, Director of Supply, described the functions of his Division, which is divided into Supply Inspection, Supply Control, Purchasing, Printing and Stationery Departments. Mr. Beck had arranged his material so effectively that in a short space of time he was able to present a clear picture of the multitudinous activities of this important section of Hydro.

Among the leading duties of the Supply Department were the checking and expediting of the tremendous quantities of materials used on Hydro's vast development projects. The Central Stores at Islington alone, Mr. Beck stated, were receiving 500 tons of new material a week. A fleet of speedy trucks and two locomotive-drawn trains were employed in the movement and storage of this material. Although 150,000 square feet had been laid out for storage, space was crowded and it has become necessary to store much of the material which was impervious to the weather in the open.

The Purchasing Department, Mr. Beck went on to say, was handling 500 orders a day, of which 350 were actual purchase orders to be placed with vendors. The scrutinizing of all these orders was a major task in itself. In order to assist the Construction Division and other branches of the Commission in their requisitioning of supplies, Mr. Beck stated that he was having a new catalogue prepared which would list all the standard items of equipment and supplies used by Hydro. In the meatime, he promised that an interim edition would be sent out. Keeping up with the activities of the Division—which have been scarcely glanced at here—Hydro's printing and stationery shops were as busy as bee-hives and doing a business valued at $350,000 a year.

Place Aux Dames!

Bringing the charm and grace of femininity to the convention, a group of young ladies were greeted at the afternoon session with appropriate decorum. These were the supervisors of the girls engaged in the cafeterias and dining-halls of major Hydro projects. It was easy to see that they had all been selected with the greatest care and that, in character and intelligence, they were admirably suited for the work committed to their charge. And their duties are exacting. Not only are they responsible for the good conduct of the girls and the efficient performance of their duties. They must temper discipline with sympathy and understanding, and be prepared to give their counsel and advice. Although understated with becoming modesty, the value of their work to the Commission was brought out by Miss Anne Boylan, Supervisor of Female Personnel at Des Joachims, as she told about her work with the girls at this major Hydro project.

Engineers' Work Lauded

Briefly addressing the convention at the evening banquet ceremonies presided over by David Forgan, Robert H Saunders, the Commission's Chairman, referred to 1948 as a year he would never forget. It would be memorable to him, he said, not only because of the grave difficulties experienced by Hydro, but also because of the great accomplishments of the Hydro staff in carrying vast projects closer to fruition than had been anticipated in the most optimistic forecasts. Mr. Saunders took occasion also to express his satisfaction over the decision to accord a greater basis of security to approved employees of the Construction Division.

The day's proceedings were brought to a conclusion with an address by John Collingwood Reade. In eloquent vein, Mr. Reade reviewed the international situation and drew attention to the increasingly important role science was being called upon to play in a changing world.

PALMERSTON PRESENTATION

A surprise presentation of an engraved silver tray to Miss Mae Phillips, upon completion of 25 years' service with the Palmerston Public Utilities Commission, highlighted a recent Commission meeting.

Commissioner P. G. Watt, in making the presentation, expressed the appreciation of himself and his colleagues for the long and faithful service rendered by Miss Phillips.



RETIRING AFTER many years of faithful service with the Lindsay Hydro-Electric System, Dan MacFarquhar was presented with a desk while Mrs. MacFarquhar was the recipient of a bouquet of roses at the recent anuual "Board and Staff" banquet in Lindsay. Mr. MacFarquhar, who has been associated with the Lindsay System for the past 30 years is shown at extreme left of above picture, chatting with the town's mayor, Col. R. I. Moore. Others in the photo are Commissioners L. A. Waddell and C. V. Sleep, Mrs. MacFarquhar, Hydro Vice-Chairman J. G. Baldwin, and Chairman A. T. Claxton.



LADIES WERE the honoured guests at the annual Ladies' Night of the Niagara District Electric Club held at the Royal Connaught Hotel, Hamilton, recently. R. A. McLean, chairman of the committee, is shown presenting one of the many valuable prizes to Mrs. Paul Steeves. The prize was an electric tea kettle.

NIAGARA DISTRICT ELECTRIC CLUB

10th ANNIVERSARY



FOUNDER OF the Club, C. H. Hutton, Chief Engineer of the Hamilton Hydro-Electric Commission, was made an honorary chief of the Six Nations Indian Confederation recently. Shown wearing his Indian headdress, he is congratulated by J. L. Cartwright, Club President. Dancing followed the banquet and entertainment program. The camera man caught Mr. and Mrs. Douglas Taylor, left, and Mr. and Mrs. Link Bingham, right, in a dancing mood.

by

C. G. W. Macintosh
Hydro News

INITIATED by C. H. Hutton, Chief Engineer of the Hamilton Hydro Electric System, the Niagara District Electric Club this year is marking its tenth anniversary. In the span of one decade the club has grown from less than a hundred members to a total membership exceeding the 500 mark.

During the present year, under the able leadership of J. L. Cartwright, the 1948-49 season President, the Niagara District Electric Club has had several interesting meetings. At one of the functions held in March this year, the founder of the club, Mr. Hutton was honoured by the Six Nations Indians when he was introduced into the tribe as an honorary Chief. He was given the appropriate appellation of "Far Seeing One."

Indeed, the name "Far Seeing One" would seem to apply to Mr. Hutton. In the summer of 1938, after conceiving the idea of the need for an Electric Club in the Niagara District to bring together the men in the area connected with and interested in the electrical industry, Mr. Hutton proceeded to sound out th opinions of several of them concerning his plan. Receiving encouragement from the outset, the indefatigable founder immediately communicated with officials of the Electric Club of Toronto and obtained their assistance in planning the organization steps for the new Niagara District Electric Club, together with a quantity of literature and a copy of the Toronto Electric Club's constitution.

First Regular Meeting

First regular meeting of the Niagara District Club was held September 28, 1938, at the Royal Connaught Hotel, Hamilton. Among those present were the Mayor of Hamilton, the late William Morrison, and the President and officers of the Toronto Electric Club. Ninety-seven men, prominent in the electrical industry, including guests, attended that inaugural meeting.

Mr. Hutton, the founder, served as the first president of the Niagara District Electric Club and he was honoured with a second term. His interest in the club has never ceased and Mr. Hutton has been active in its affairs ever since.

Nine other able men have served the club as its Presidents, the present head being J. L. Cartwright of the Hamilton Hydro Electric System. Other officers for the 1948-49 season include the following:

Secretary, H. W. Kilgore; Treasurer, J. H. Jackson; District Vice-Presidents: Reg. Phillips, Brantford; C. A. Fisher, Burlington-Dundas; F. C. Marshall, Galt-Preston; Lloyd Harlock, Guelph; R. A. McLean, Hamilton; Max Zeeh, Kitchener; William

Continued on page 31)

Distaff View Of Des Joachims

"Ladies Of The Press" Gather First-Hand Impressions Of Hydro's Biggest Postwar Development



DES JOACHIMS Project Manager, Angus Richardson, and reporters from Ontario magazines and newspapers view the construction work in progress at the main dam. The reporters are a few of some 20 lady journalists who visited the site recently.

BIG, isn't it?" was the first awestruck reaction of a group of some 20 newspaperwomen who visited Hydro's Des Joachims project recently.

But, as they proceeded on a tour of the site, where 2,500 men are now employed, their initial feeling of awe changed to one approaching admiration, mingled with humility, as they stood in the shadow of the towering main dam structure. The immensity of the project was further brought home to them upon learning that, to reach completion, the Des Joachims "job" will require 4,000 tons of steel and sufficient concrete to lay a standard sidewalk 3,300 miles long.

Besides viewing the actual construction work, the "ladies of the press" were conducted by James A. Blay, Promotion Manager, W. Ron Mathieson, Head Office, and Bill Hogg, Resident Engineer, on a tour of the auxiliary facilities connected with the project, which is located about 140 miles northwest of Ottawa. A surprise visitor to the party was Hydro Chairman Robert H. Saunders, who provided interesting and valuable bits of information as the group proceeded from one aspect of the development to another.

First on the agenda, after disembarking from the train which had brought them from Toronto and Ottawa, was breakfast at the camp cafeteria. And an appetizing meal it was! The quality—and quantity—of the food, together with the cheery atmosphere of the cafeteria itself, drew favourable comments from the ladies. "Just like a modern factory cafeteria in a large city," said one. Questions and compliments, in almost equal numbers, kept Ed Krupp, Camp Superintendent, busy as the ladies delved into the mysteries of what makes the camp tick—gastronomically speaking.

As is natural enough among a group of women, great interest was aroused by the huge carcasses of meat in the cold storage rooms, and the fragrant rows of fresh bread and piles of luscious cookies (they sampled them!) in the bakery. Surrounded by tiers of apple pies, Mr. Krupp told the party that an ordinary roast beef dinner requires 600 pounds of beef—after boning and trimming. The daily turnout of the bakery, he added, includes 900 loaves of bread, 300 pies, and innumerable cakes, cookies, and doughnuts. And counting the 300 gallons of milk consumed per day, plus other astronomical figures, "the situation," gasped one of the reporters, "would be a housewife's nightmare—or heaven, depending on how you look at it!"

The ladies also investigated the "innards" of the combination mixing-and-chopping machine, presided over by the head chef, "Rocky" Savard, who chatted for a few minutes in French with the reporter from Ottawa's *Le Droit.*

Impressive Sight

From the cafeteria, the party proceeded to the main dam, which was given a thorough going-over by the energetic group of women. Nothing daunted them—even crossing suspension bridges or scrambling up 85-foot ladders to peer into the great wooden formwork which will eventually be filled with concrete to form the dam itself. Enough concrete was already poured to give a rough idea of what the finished product would look like, and a very impressive sight it was!

From the hardened concrete in the dam to the raw material in the giant mixer was a matter of a few steps. Amid the deafening roar of gravel, sand, and cement churning inside the machine, the visitors were informed that it had narrowly escaped a journey to Russia, after finishing its war work. Only a delay in shipping made it available to Hydro.

A four-mile trip to the McConnell Lake control dam, also nearing completion, proved the ingenuity and resourcefulness of engineers who have done a marvellous job of rehabilitation after the damaging fire of last February.

Back at the camp, after lunch, interest centred in the women's residence, in charge of Miss Anne Boylan, supervisor of female personnel. Miss Boylan was bombarded with questions about the daily lives of her 40-odd charges—their working hours, pay, housing accommodation, and recreation. The big problem of romance was dealt with quickly and thoroughly by Miss Boylan in the laughing remark that "diamonds fly like snowflakes at Des Joachims." She has little trouble replacing girls who fall victim to Cupid, however, as the supply is usually greater than the demand.

One of the cafeteria girls, Susan Pretty,

(Continued on page 31)

by
Edith B. Kent
Hydro News



WITH NOTEBOOK and pencil in hand, top left, newspaper women who recently visited the Des Joachims projec bombard Ed. Krupp, camp superintendent, with queries concerning the camp cafeteria. Daily consumption o food, they learned, runs into astronomical figures.

"ROCKY" SAVARD, head chef at Des Joachims, demonstrates (left centre) the "workings" of the mixing shredding and chopping machine. Keen interest wa shown by the reporters in this unusual kitchen gadget

THINGS—AND people—are looking up at the McConnel Lake control dam, below, where a remarkable recover from the damaging effects of last February's fire is visibl at a glance.



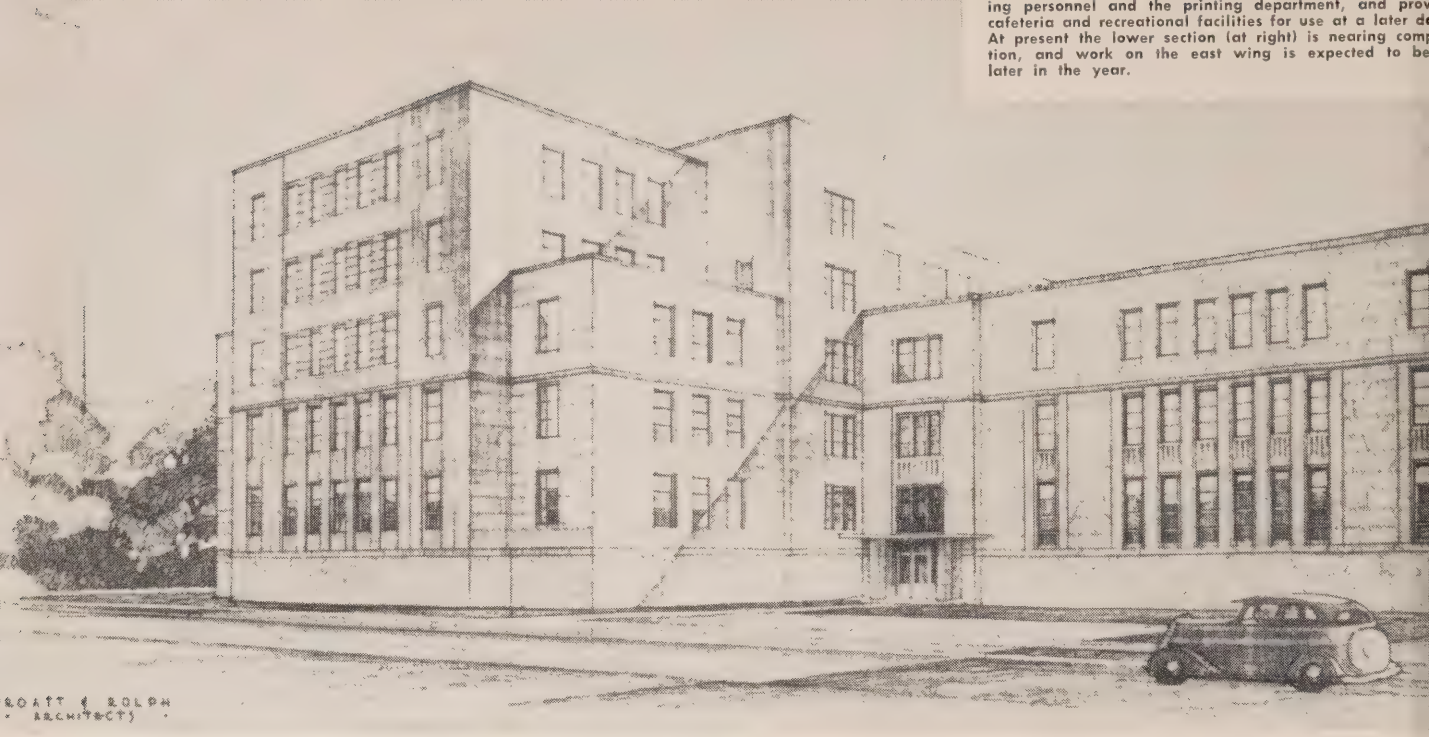
LING WATERS of the Ottawa River, below the main dam, form the back- d for this "shot" of a portion of the party shown viewing construction work at the dam site. Immensity of the project awed the reporters.

GERARD DESCHENES, flanked by two "ladies of the press" in the bakery at Des Joachims, poses for the photographer with two luscious samples of culinary art.





ing personnel and the printing department, and prov
cafeteria and recreational facilities for use at a later d
At present the lower section (at right) is nearing comp
tion, and work on the east wing is expected to be
later in the year.



New Building Nearing Completion

Will Help Ease Commission's "Housing" Problem — Located At Rear Of Present Administration Building

AS the first section of the Commission's new building nears completion, a measure of relief is in sight for the acute housing problem facing the Head Office staff.

With Hydro expanding at an unprecedented pace, it has been necessary to make many additions to the staff whose combined efforts are vitally associated not only with the day-to-day maintenance of Hydro in Ontario but also with the tremendous and highly accelerated $400,000,000 construction program now under way.

Located at the rear of the Commission's present Administration Building at 620 University Avenue, and facing on Orde Street, the new structure comprises three storeys and a basement, with a total area of approximately 65,000 square feet. Already the Printing Department has taken over its new quarters in the basement, some of the drafting personnel have moved in, and more are making ready to do so as soon as possible.

Construction of the central section of the building was begun in May, 1948, and is expected to be completed by the end of July. Later in the year it is expected that construction will be begun on the engineering office building on the east side of the completed portion, and eventually it is hoped to build a corresponding section on the west. Plans for the east section, which will have a basement and five floors, are now under way, and completion of this part of the building is expected in 1951.

On the main floor it is planned to have a kitchen and cafeteria, seating 750 persons, but due to the office "housing shortage" the floor space assigned to the cafeteria will be used for the time being at least as a drafting room until office space is available elsewhere. However, kitchen equipment will be installed as soon as is feasible. About 60 per cent of the main floor will thus be available for office space, and will house approximately 100 persons.

The second and third floors are intended primarily to give temporary accommodation to 300 drafting personnel. The third storey is ultimately destined to be an auditorium, and as soon as the east wing is in use, will be fitted out for the purpose for which it was originally intended, with a stage and dressing rooms, and lounges and reading rooms for the staff. These, it is hoped, will provide congenial quarters for a brief relaxation period during the lunch hour and for special events.

Set back from the street to provide for a lawn, the service building is faced with Queenston limestone. The other three exterior walls are of precast concrete slabs, approximately 5′ x 10′. The exterior of the east section also will be of limestone. Total floor space of the service building is approximately 65,000 square feet, the main section measuring 100′ x 150′, and two connecting wings on the north-east and north-west corners 27′ x 50′. Access to the east wing and the projected west wing will be provided through these small sections, which will also house stairs, washrooms, and air-conditioning units in the basement.

The building is air-conditioned throughout by means of dual ducts, one handling cool air and the other heated air. Each room is thermostatically controlled. Heat is provided through a temporary steam main by Administration Building boilers. To take the additional load, a third boiler was installed last year.

Plans for the new office building (the east wing) include a tunnel connection under Murray Street connecting with the Administration Building. The tunnel will provide for pedestrian traffic as well as housing permanent steam mains and other conduits.

A singular operation in the construction of the service building was the method of pouring concrete for its foundation. Because the soil was considered unsatisfactory for individual footings, it was decided to have a single pouring, on a floating raft foundation. This was designed to distribute the weight of the building evenly over the whole area. The pouring was accomplished in a single day.

Architects for the edifice are Sproatt and Rolph of Toronto, and contractors are Bradford-Hoshal, also of Toronto.

by
Edith B. Kent
Hydro News



THIS AERIAL view of Islington Service Centre shows the East Yard containing most of the buildings at right and the West Yard at left centre. The towers of Kipling Transformer Station are visible at upper right centre above the buildings of the Service Centre.

SUBURBAN NEIGHBOURS

Commission Proceeding With Construction Of Islington Service Centre And Kipling Transformer Station On Adjoining Properties

by

John A. Murphy
Hydro News

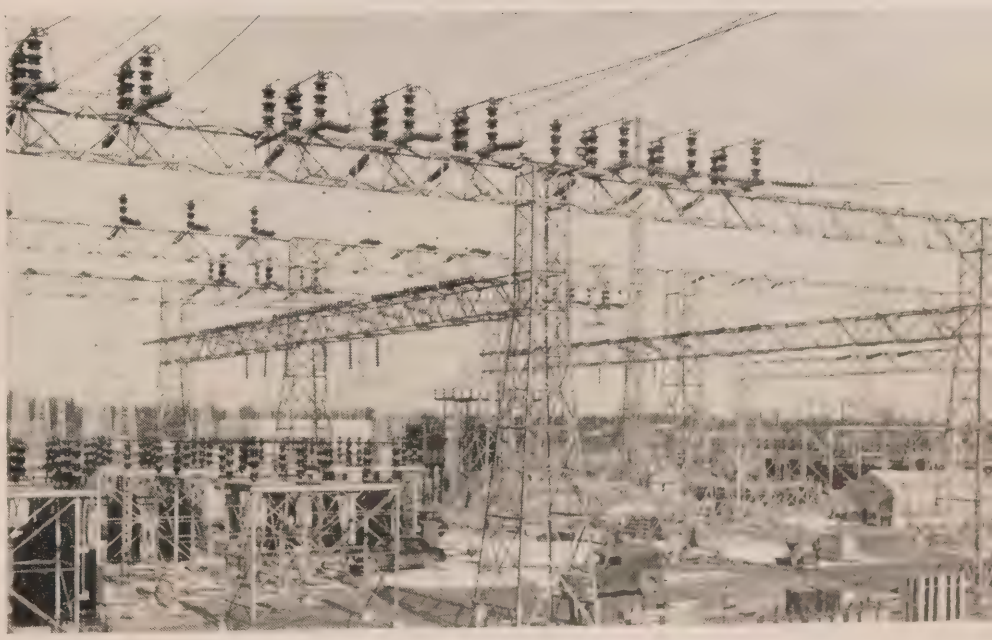
FEW miles west of Toronto in the fast-growing community of Etobi-ke Township, two Hydro projects, ated close to Islington in an area approximately 250 acres, are nearing mpletion.

Site of the twin projects is an area tween the Queen Elizabeth Way on the th and the Dundas Highway on the rth. Although the limits of the prop-y do not extend as far as either thor-ghfare, most of the area between is en over to Hydro activity. Although two jobs are literally next door neigh-rs, they are separate from one another l will operate independently. The ger of the two, covering nearly 200 es, is the Islington Service Centre, ile the adjoining area comprises Kip-g Transformer Station.

Islington Service Centre, when com-ted, will be the Commission's Central res depot for the whole of Ontario. e new transformer station is already ying an important role in the distribu-n of 25-cycle power in the greater ronto area and will assume even greater nificance with the progress of the 60-le conversion.

Although not yet completed, Islington vice Centre has an inventory of goods hand valued at nearly $12,000,000. ere is a constant turnover of stored terials averaging nearly 2,000 tons a ek, in receipts and shipments. The ns that go to make up this impressive l are numerous and varied. In the ller categories are needles, electric t bulbs, machine screws and all types bolts. From there the list continues cover all classifications of insulators meters, 3 kva distribution transform-and 10,000 kva power transformers. total amount of wire and cable ed at Islington at present would

(Continued on page 17)

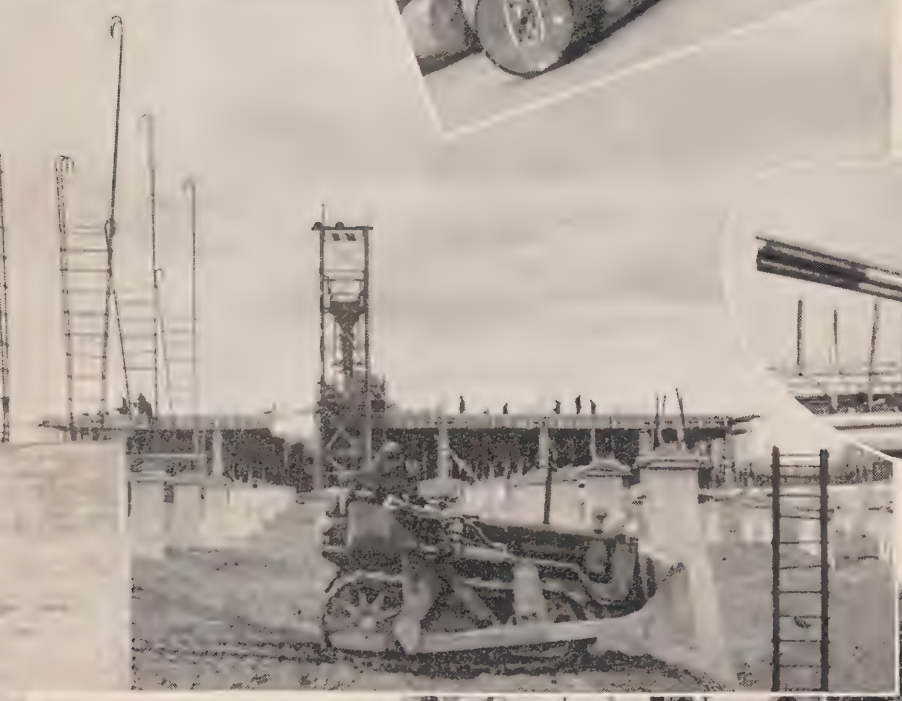


NOW IN operation, this switching structure controls the 115,000-volt 25-cycle powe coming in to the transformers at Hydro's new Kipling Avenue station for transmission t outlying districts at 26,000 volts.



LITERALLY THOUSANDS of miles of wire and cable are on the inventory at Islington. The service centre averages a turnover of 2,000 tons of all types of material and equipment every week.

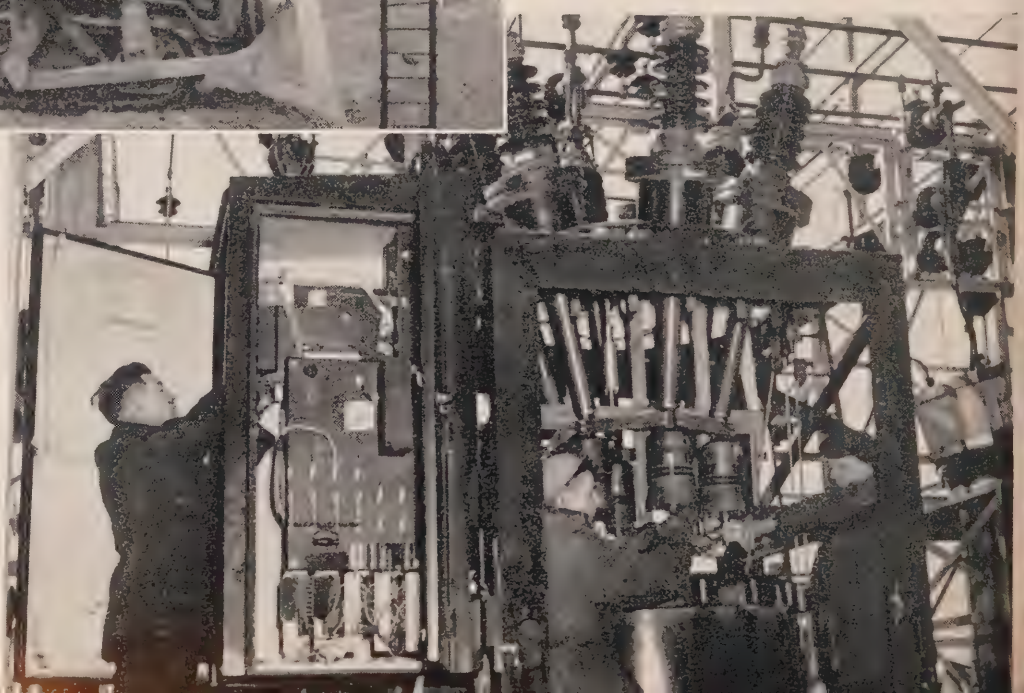
A POLEYARD, wit
ultimate capacity
100,000 poles, wi
cupy a large sectio
the outdoor st
space at Islingto





HEADQUARTERS OF the Service Centre will be the Permanent Stores Building shown here under construction. It will be of the same type of reinforced concrete construction as the Service Garage.

AN INTEGRAL part of the switching structure at Kipling Transformer Station, an oil circuit breaker is shown at right undergoing an inspection.



SUBURBAN NEIGHBOURS

(Continued from page 15)

stretch for thousands of miles if unrolled from the spools and laid end to end. Probably the most unique articles ever stocked however were several prefabricated houses, now serving as homes at Hydro colonies.

Modern Garage

Another function of the Service Centre will be the modern service garage which has recently been completed. This building will provide repair and maintenance facilities for all Hydro transport and construction vehicles. Previously this work was carried out at Commission properties in various parts of the province where the available resources were sorely overtaxed. Mechanics at Islington by the way, will not be troubled with occupational ailments from working under vehicles on cold concrete floors since the repair bay will feature radiant floor heating.

Playing a prominent role in the development of the Service Centre is that versatile wartime innovation the Quonset Hut. With the garage the first of the permanent buildings completed to date, the Quonset huts of varying dimensions house most of the office and stores already on the property. They have been erected in the East Yard, east of the railway tracks that divide the area into two main yards. According to present plans most of the permanent buildings will be erected in the East Yard leaving much of the West Yard available for outdoor storage. Two Frequency Conversion buildings are being built in the West Yard, and its spacious 103 acres will provide space for any additional construction deemed necessary in the future.

Pending completion of the Permanent Stores Building, the offices of the Stores Section are located in the largest of the Quonset huts, an extensive structure 400 feet long and 80 feet wide. Second largest building is another multiple Quonset also 80 feet wide but only 240 feet long. A neat row of 16 standard size Quonsets furnish 4,000 square feet of storage each and bring the total covered storage capacity of Islington to approximately 200,000 square feet.

Rapid Progress

Two years ago the land on which the Service Centre now stands was a barren stretch of unimproved land bordering the main line of the Canadian Pacific Railway. In June, 1947, construction of the first of the Quonsets was begun and by the end of the year five were completed and in use. The remainder of the temporary buildings were erected and in service by the end of 1948, and work had begun on the garage and permanent stores buildings.

An interesting feature of the construction of the service garage and stores building is the utilization of large, prefabricated insulated wall panels of the sandwich type of wall, although only six inches thick, is said to provide better insulation than a 12-inch brick wall. The roof of the garage is supported by panels of Bailey bridgework.

Over in the West Yard, the first of two buildings are now under construction for the Frequency Conversion Division. However the greater part of this area will be devoted to outdoor storage. Much of this space will be used to store Bailey Bridge material, with another large sector given over to the stockpiling of poles and timber. At the present time there are from 15,000 to 20,000 poles in storage and it is expected that the yard will have an ultimate capacity of 100,000. These poles for the most part are products of British Columbia and vary in length from 25 to 85 feet. They are moved about the yard by a self-propelled Diesel crane operating on tracks laid between the stock piles.

At the moment, a combined construction and operating staff are working at Islington, and when the job is completed, it is anticipated that the operating staff of this huge plant will number in the hundreds.

Kipling Transformer Station

On the 35-acre tract immediately northeast of the Service Centre, focal point of a maze of power lines and transmission towers, is Kipling Transformer station, already an important link in Hydro's Southern Ontario System and destined to assume even greater importance in the immediate future.

Until new generating stations now under construction are in service, and the

TYING - IN the underground cables from Hydro's Kipling Avenue Transformer Station with 26,000 - volt overhead transmission. The suspended cables to be joined to the underground conductors are sealed for protection.



TRANSFORMERS ARE among the more durable types of equipment that are stored outdoors at Islington until shipped out to go on "active service".



frequency conversion program well under way, Kipling is serving as a terminal station for 25-cycle power from existing eastern generating sources. It operates in conjunction with Leaside Transformer Station supplying load for the Greater Toronto area. It also reinforces the transformer station at Burlington in supplying the Hamilton area.

However when the conversion program has been completed Kipling will become one of the most important links in the extensive Southern Ontario network. Normally it will be chiefly devoted to supplying the Toronto district but will be available when required to maintain service to a much greater area.

Work began on Kipling in 1946 with the clearing and levelling of the property. Following this operation, railway sidings were laid down, a water supply system installed and camp and office buildings erected.

Although retarded considerably by behind-shedule deliveries of material, work on the new station progressed to the point where, at the end of 1948, the initial 25-cycle, 115,000-volt switching equipment had been erected. Part of the transformer equipment required to step down voltage for the Toronto district has already been installed and the remainder will be ready for service at an early date. Most of this 25-cycle equipment is designed for ready conversion to 60-cycles, since Kipling will be an entirely 60-cycle station when the frequency conversion has been completed.

Present activity at Kipling is centred on installation and putting into service of 25-cycle equipment, but it is expected that work on the 60-cycle switching structures and transformer units will commence within the ensuing months. Working schedules have been arranged to tie in with initial deliveries of power from Des Joachims in 1950. A 230,000-volt transmission line will connect Des Joachims directly with Kipling and additional provision will be made for receiving power from the Ottawa River developments as they come into operation a year later.

All power from new generating sources in the eastern part of the province will come into Kipling at 60-cycle and at 230,000 volts. Here it will be stepped down to 115,000 or 26,000 volts as required. Through a tie-in with Westminster frequency changer station near London a flexible service will be provided for the entire duration of the frequency conversion program.

One of the most impressive features of the Kipling Station is the switching structure. Power marshalled in the 72-foot towers passes on to the transformers. Two of the three 25,000 kva units are already in place. They are fitted with a wheeled undercarriage and stand on rails set in concrete foundations. Weighing about 100 tons each, they were moved to the proximity of their installation point on a specially-constructed railway siding.

Nerve centre of the transformer station, will of course be the central control room which is housed in a brick building, 100 feet long and 80 feet wide, and embodying many modern improvements. Other buildings will contain protective equipment. In all it is estimated, 10,000 cubic yards of concrete and 2,000,000 pounds of steel will go into all the buildings and electrical structures.



ANOTHER VIEW of the outdoor storage facilities at Islington Service Centre. When completed this 200-acre project will be Hydro's central Stores Depot for the entire province.



FACILITIES FOR servicing Hydro transport and construction vehicles are to be found in the modern service garage. Of reinforced concrete construction, it has specially insulated walls and radiant floor heating in the repair bay.



WILLIAM M. GRUNDY
Assistant Chief Forester



W. RAY HUNTER
Chief Forester



A. H. SHARPE
Landscape Engineer



GEORGE T. BRADFORD
eral Forestry Superintendent



FRED CORIN
Forest Engineer



GEORGE HUNTER
Records and Statistics Clerk



L. CARL WARNER
Niagara Region



J. C. McCLELLAND
Georgian Bay Region

Forestry Section

DEALING with the varied problems relating to line clearance, forest management and reforestation, maintenance of grounds and chemical power spraying, Hydro's Forestry Section has become an important branch of the Commission's Operations Division. This section also assists the Personnel Branch in preparing courses for foresters given at the Training Centre.

Chief Forester W. Ray Hunter is responsible for development of policy and supervision in connection with all forestry work, in conjunction with Assistant Chief Forester William M. Grundy. The Staff of the Section also consists of: Fred Corin, Forest Engineer; George T. Bradford, General Forestry Superintendent, and George Hunter, Records and Statistics Clerk.

A. H. Sharpe, Landscape Engineer, attached to the Mechanical Engineering Staff, acts in a consultant capacity to the Forestry Section, developing policy in respect to site maintenance practice.

The Forest Engineer is responsible for forest management and reforestation. He also makes forest surveys, estimates volumes of timber and supervises reforestation. The General Forestry Superintendent deals particularly with arboriculture relating to line clearance and trees on important properties.

The Chief Forester is represented in the nine Regions by Regional Forestry Superintendents, who are responsible to the Regional Managers through the Operating Engineers for direction of all forestry work in each region.



A. M. W. MOFFAT
West Central Region



R. D. L. McCULLOUGH
Northeastern Region



A. F. POTTER
Toronto Region



A. S. HARRINGTON
Northwestern Region



F. E. SIMPSON
East Central Region



J. W. KINNEAR
Eastern Region



W. C. R. JOHNSON
Western Region

Digging for Heat

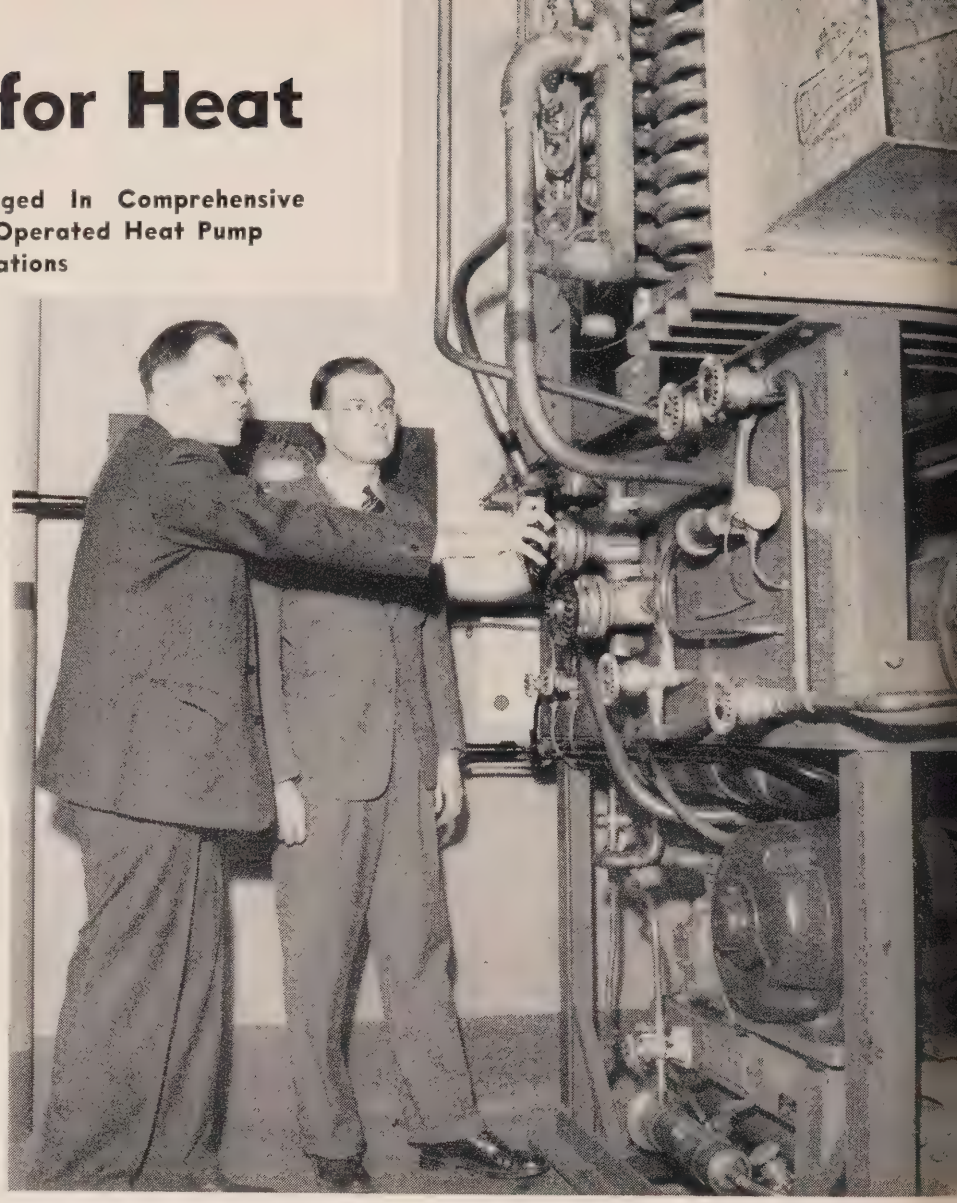
Research Division Engaged In Comprehensive Study of Electrically-Operated Heat Pump Installations

• EDITOR'S NOTE: Most people would scoff at the suggestion that some day old Mother Earth may be supplying heat for their homes! And who could blame them? But, surprising as the suggestion may sound, such a possibility is being put to the test by several Canadian, U.S. and other scientists, including members of the Commission's Research Division in consultation with Dr. A. D. Misener, Professor of Physics at the University of Toronto.

An interesting review of the studies which have been, and are being made in connection with heat pumps is given in the following article specially written for Hydro News

by

J. B. MacDONALD,
Assistant Research Engineer
and
R. H. HAWKINS
Special Technical Assistant



DR. A. D. MISENER, University of Toronto Professor of Physics, examines the experimental pump in the Wiltshire Transformer Station where the heat source is water circulated to cool the transformers. J. B. MacDonald, Assistant Research Engineer, who is conducting the tests for the Commission, is shown with Dr. Misener.

IN order to keep abreast of a development, which, if widely adopted, would create very heavy additional demands for electric power, the Commission's Research Division, for the past three years, has been making a comprehensive study of the status of heat pumps.

An experimental installation was completed recently at Wiltshire Transformer Station in Toronto. This heat pump is being used both for experimental tests and the practical purpose of heating the station in winter. As well, it will be used in the summer to provide cooling for the building. In addition, the Commission is taking advantage of an opportunity to obtain detailed performance records from two domestic heat pumps, one near Islington and the other at Kitchener.

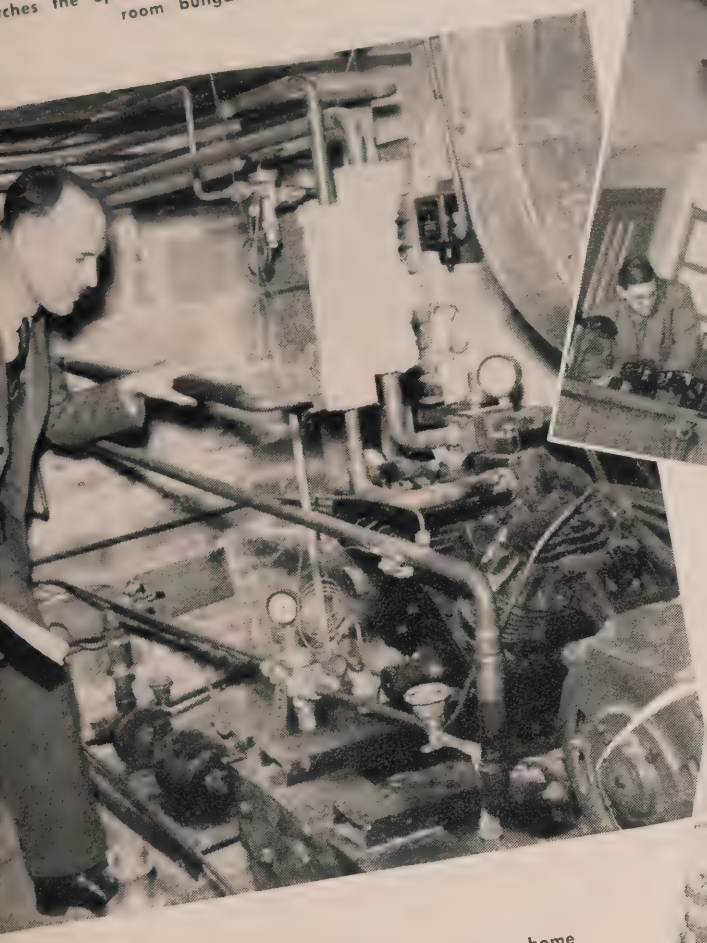
Method Of Operation

The idea of the heat pump is not new. Almost a century ago Lord Kelvin suggested the possibility of using the refrigeration machine for heating buildings. As a matter of fact, without being aware of it, many householders already have a miniature heat pump in their kitchen—the electrical refrigerator. This can be understood when one pauses to consider what the household refrigerator actually does. Its purpose is to cool the food placed in the cabinet. In order to cool anything heat must be extracted from it. This is done in the refrigerator by making use of the fundamental principle that heat flows from a hot to a cold body. The heat in the food is taken up by a cool fluid called the "refrigerant" which is pumped through the cooling coil in the refrigerator. This heat is then given off by the refrigerant to the kitchen. Thus the function of the refrigerator is merely to transfer heat from a cool space to a warmer one.

The operation of a heat pump is identical to that of a refrigerator, its purpose being to transfer heat from a much larger heat source to heat the entire home. Although the temperature of the heat source is lower than the temperature required to heat the building, the heat removed from the source is raised to a useful temperature by the action of the heat pump on the refrigerant fluid. This action consists of compressing the refrigerant fluid which automatically raises its temperature. The heated refrigerant then passes through heat discharge coils, similar to an automobile radiator, where it gives up its heat to the building through the usual ducts. In giving up the heat, the refrigerant becomes cooler but not cool enough to take up heat from the source. Therefore, it is pumped through an expansion valve and in expanding its temperature is automatically lowered below that of the heat source. As it passes through a heat pick-up coil located in the heat source, the cold refrigerant absorbs low temperature heat. This cycle of operation is then repeated.

(Continued on page 22)

PH HAWKINS of the Research Division laboratory staff
ches the operation of the heat pump installed in a four-
room bungalow near Islington.





IN THE control room of the Wiltshire Transformer Station a workman is shown completing installation of an air duct which distributes heat from water used to cool transformers.

HIS PHOTOGRAPH shows one of the rooms in the Islington home where the heat source being tested is a drilled well six inches in diameter and 175 feet deep.





LOCATION of the deep well installation at the Islington home is indicated by J. B. MacDonald, Assistant Research Engineer.

(Continued from page 20)

Therefore, the main components of the heat pump are the heat pick-up coil, the compressor, the heat discharge coil, an expansion valve, and the refrigerant to convey the heat. Air, water and the earth are possible heat sources which will be discussed later.

Efficiency Of Heat Pumps

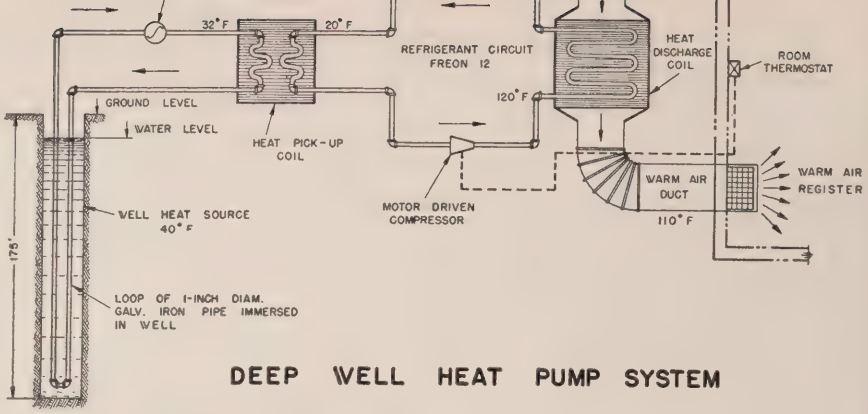
The total heat delivered from a heat pump includes the electrical energy used to operate the motors, as well as the heat obtained from the source. The ratio of total heat supplied to the building to the energy required to operate the heat-pump motor is a measure of its performance efficiency. The efficiency of any installation is determined chiefly by the temperature of the heat source: the warmer the source the better the efficiency. With earth as the heat source, in these latitudes efficiencies of about 3 have been reported, i.e., for one unit of electrical energy used, two free heat units have been obtained. With a source temperature of 70 degrees Fahrenheit, as frequently available from the transformer cooling water at Wiltshire T.S., performance efficiencies of better than 5 have been obtained.

Experimental Heat Pumps

The heat pump at Wiltshire Transformer Station is electrically driven by means of a five-horsepower motor. The heat source is the water which is circulated to cool the transformers. A small portion of this water is passed through the heat pick-up coil in the heat pump where, as previously explained, its heat is extracted and used to heat the building. The transformer cooling water, at temperatures varying from 50° to 70° F, is almost an ideal heat source. Hence, in this installation the problem of obtaining a suitable heat source was a minor one. This unit is a good example of an industrial application of the heat pump and is convenient for the investigation of many factors, such as mechanical performance, noise, operating costs and characteristics. To provide cooling in the summer, the method of operation will be reversed. This will provide for picking up the heat from the building and carrying it away by the transformer cooling water. In order to do this it is necessary merely to reverse the action of the coils. In other words, in hot weather the heat pick-up coil will be used as a heat discharge coil and vice versa.

Domestic Heat Pump

The domestic heat pump in a private home near Islington is smaller than the Wiltshire Street installation and is being used to heat a four-room bungalow. It is driven by a three-horsepower electric motor. The heat source being tested is a drilled well six inches in diameter and approximately 175 feet deep. In this particular application, the well water is not used directly, but the heat is extracted by circulating an antifreeze mixture of water and alcohol through 350 feet of one-inch pipe immersed in the well. After having taken up heat in the well, the circulating mixture is pumped through the heat pick-up coil in the heat pump where it gives up its heat to the refrigerant. The antifreeze mixture is then recirculated through the pipe in the well. The purpose of this circulating mixture is merely to act as a go-between in transferring the heat from the well water to the refrigerant in the heat pump. This extra step of providing an intermediate circulating mixture is necessary, as the flow of water into the well is limited. Consequently, the water level would be lowered seriously if the water were pumped from the well and discarded after the heat had been extracted from it. Mr. B. A. Wilson, the owner, has kindly made his heat pump installation available to the Commission's laboratory staff for testing, and records have been kept of its operation through this past heating season.



DEEP WELL HEAT PUMP SYSTEM

Kitchener Experiment

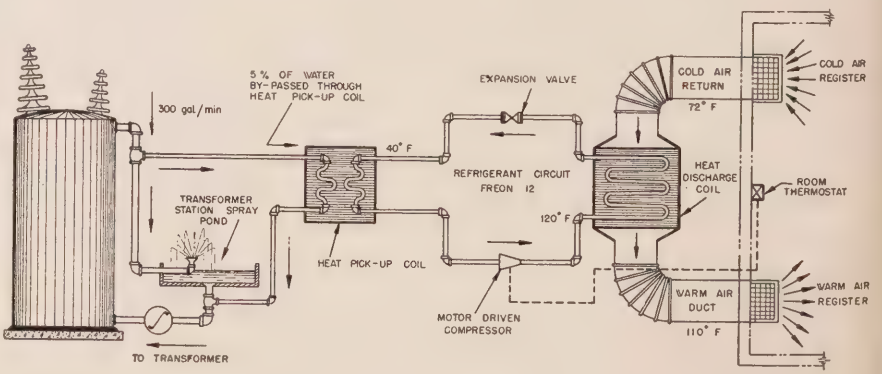
Under the supervision of Mr. A. W. Bromley, Chief Engineer, the Kitchener Public Utilities is conducting tests on an experimental domestic heat pump. This unit uses heat from the earth to heat a well-insulated five-room bungalow. It is driven by a three-horsepower electric motor and provides winter heating and summer cooling. Unlike the Wilson installation, there is no intermediate circulating fluid, the refrigerant being passed directly through a heat pick-up coil buried in the earth. This coil consists of a horizontal loop of copper tubing 7/8 inch in diameter and approximately 500 feet in length, placed at a depth of six feet. In co-operation with the Research Division of Hydro, Mr. Bromley has located temperature-measuring devices at various depths and selected distances from the loop. From time to time, temperature readings are taken of the earth surrounding the pick-up coil, to provide an indication of the amount of heat that is being extracted.

The apparent sources of heat for practical heat pump operation are air, water and earth. Although installations which employ each of these exist and operate successfully, indications are that in Canadian latitudes air is an unpromising source, and water is not generally a favourable one. Despite limitless supplies of heat in air, the efficiency of a unit which could transfer heat from this source would be quite low at the particular times when most heat is needed.

Industrial applications of heat pumps, with favourable efficiencies, are possible where large amounts of heat in cooling water and waste water now are being discarded. Such installations would provide a means of utilizing formerly wasted heat, making it available at temperatures suitable for such uses as heating and supplying hot water for washrooms. However, even if electrical energy at moderate cost be available for operation, the economic soundness of any proposed installation would need to be reviewed.

The use of water as a heat source for domestic heat pump installation in Canada is less promising. Possibilities exist

(Continued on page 29)



WILTSHIRE STATION HEAT PUMP SYSTEM



—London Free Press Photo.

AN AERIAL view of the Sir Adam Beck Memorial Sanatorium with a photograph of the founder, Sir Adam Beck, inset. Located just outside London, the hospital which was formerly called the Queen Alexandra Sanatorium is a widely known centre for the treatment of tuberculosis.

HONOUR MEMORY OF SIR ADAM

Rename Sanatorium

HAVING been renamed Sir Adam Beck Memorial Hospital, the former Queen Alexandra Sanatorium near London now stands as a permanent memorial to "The Father of Hydro" who, along with Lady Beck, founded this widely known centre for the treatment of tuberculosis in the year 1910.

The change in name was suggested a year ago by E. V. Buchanan, General Manager of London Public Utilities Commission, and honorary secretary of the London Health Association and intimate friend and associate of the late Sir Adam Beck. The suggestion was approved recently at the annual meeting of the association.

Sir Adam and Lady Beck founded the Sanatorium, around 1910, at a time when public interest in the battle against tuberculosis was coming to the fore. The Sanatorium has since kept pace with the advancements of science and has established a noteworthy record for successful treatment. The 590-bed hospital treated more than 1,000 patients last year when 648 operations were performed, 819 X-ray films recorded and over 37,000 laboratory tests conducted. It is interesting to note that the former name was selected years ago when Queen Alexandra lent her patronage to the Rose Day tag fund operated in support of sanatoria.

This Memorial Sanatorium, however, is just one of Sir Adam's many achievements during a colourful career of public service to the people of Ontario. He was elected Mayor of London in January, 1902. In May of the same year he was elected to the Provincial Legislature. In the following month of June he took an active part in a conference of manufacturers held in Kitchener, then known as Berlin, to discuss the possibilities of bringing cheap electric power from Niagara Falls to the manufacturing centres of the Province. That conference has since been regarded by many as the real beginning of Hydro in Ontario. Not long after this The Hydro-Electric Power Commission came into being with Adam Beck as its first Chairman, a position he held until his death in August, 1925.

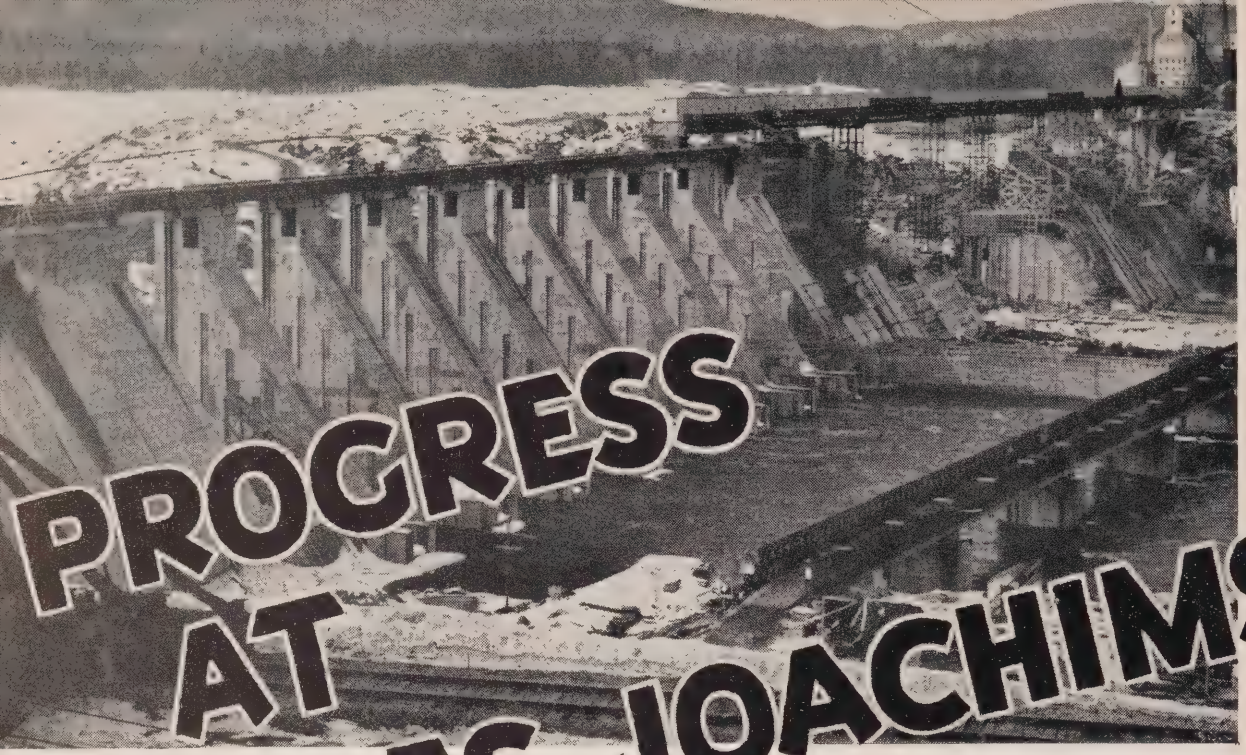
In the year 1909 he and his wife were presented at court, and in 1914 he was knighted.

Sir Adam's name is also associated with London's famous artesian wells. Here he also waged an uphill fight to have pure spring water brought in as the source of London's water supply.



E. V. BUCHANAN

General Manager of London Public Utilities Commission and, for many years an associate of Sir Adam. Honorary Secretary of the London Health Association, Mr. Buchanan, more than a year ago, suggested that the Sanatorium be renamed in memory of the "Father of Hydro".





PROGRESS AT DES JOACHIMS

Construction Work Is Proceeding On Schedule
Closure Operations To Be Done In Two Stages

CONSTRUCTION work is proceeding on schedule at the Des Joachims power development on the Ottawa River, 38 miles upstream from Pembroke. At the time of the writer's visit, at the end of March, when more than twenty women reporters saw this immense 358,000-kilowatt (480,000 hp) project, about half of the concrete had been poured on the main dam and powerhouse.

This, in effect, means that at that time 206,000 cubic yards of concrete had been poured on the main dam which, when finished, will be 2,400 feet long and 190 feet in height from the river bed. The powerhouse section was also well under way with 14,000 cubic yards of concrete having been poured.

Activity is in evidence on every hand at this tremendous undertaking. At the McConnell Lake dam on the Quebec side of the river where the control dam, 1,600 feet long with a maximum height of 130 feet will be located, 120,000 of the total estimate of 270,000 cubic yards of concrete had been poured. This dam, we were told, would incorporate forty 16-foot stop-log sluices and six 40-foot steel sluice gates. It was learned that the discharge channel for McConnell Lake had been completed, as well as the rock-filled protection dyke adjacent to Des Joachims village.

Everywhere you turned you could see tangible evidence of the progress which had been made by the 2,700 men now employed at Des Joachims which, when completed, will be the second largest of Hydro developments. It was ascertained that the scroll case for unit or turbine No. 1 had been erected and was ready for welding, and parts for the closure gates at the main dam were also being erected.

Closure In Two Stages

The closure operations, we were informed, would be done in two distinct stages. The first stage would be at the main dam where the water will be raised sufficiently to pass the entire flow of the Ottawa River through the diversion sluices at McConnell Lake dam. This first operation is scheduled to take place during this coming summer. The second stage or final closure at McConnell Lake to complete the raising of the water to the new head pond level, will probably get under way about the end of this year.

The tailrace channel, 175 feet wide, will be excavated for a distance of over a mile downstream from the powerhouse. This work will involve an excavation of approximately 1,400,000 cubic yards of rock. It is estimated that it will require anywhere from eight to ten months to complete this phase of the work.

It is interesting to note that if the complete closure were carried out at the main dam then the tailrace area would not be dry until the plant was ready to go in service. This would mean that the tailrace would have to be excavated after that time which would delay the development's date of operation by approximately the time required to excavate this channel. With the two-stage closure, the excavation of the tailrace will be carried out while the final closure is taking place at McConnell Lake dam.

No doubt the rapid progress on the Des Joachims main dam is due to the use of the four-storey automatic concrete mixing plant at the north end of the dam. Sand and gravel from a nearby point are carried by a conveyor belt to the mixing plant. Another conveyor system, supported by Bailey bridge structures, delivers the concrete mixture to sections being poured.

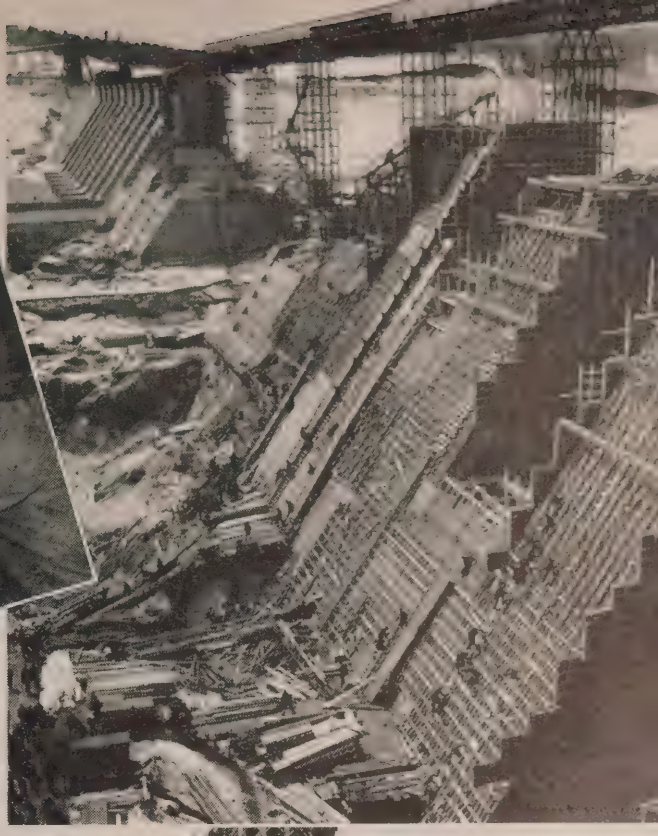
The right-of-way for the 230,000-volt transmission lines has been cleared and some of the new type of steel towers have already been erected. Power from Des Joachims will be transmitted some 200 miles to Kipling, and then on to Burlington and Westminster.

It is reported that the Ashport-Adelard C.P.R. diversion is now ready for operation and work is proceeding on the Deux

(Continued on page 29)

by
Grace J. Carter
News Editor





UPPER LEFT—This illustration shows workmen building the rib-work for a 75-ton gantry crane which will be temporarily installed on the top of the main dam at Des Joachims for raising and lowering the closure gates during construction.

UPPER RIGHT—A striking view of the main dam under construction, viewed from the Quebec side of the river.

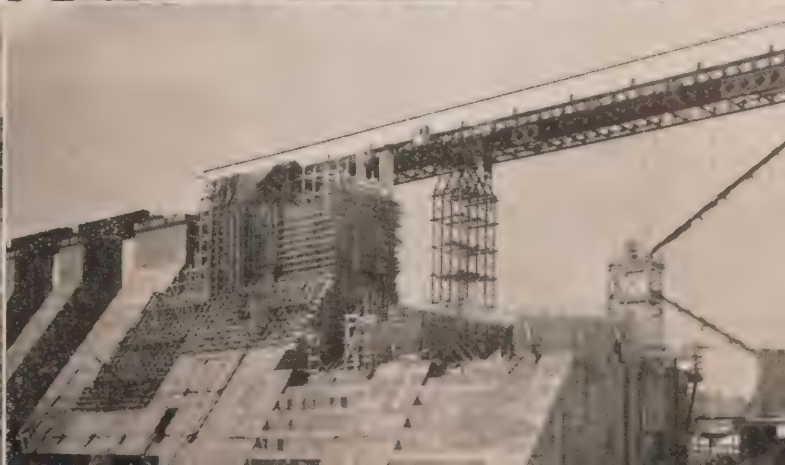
CENTRE—THIS shows the Bailey bridging across the Interprovincial channel. In the background is the main concrete mixing plant located on the Quebec side of the Ottawa River at the north end of the dam, and in the foreground is a temporary suspension bridge.

LOWER LEFT—An upstream view from the Ontario side of the main dam diversion sluices, showing the overhead construction cableway.

LOWER RIGHT—Another view of the downstream side of the main dam under construction.







New Home For Merlin R.O.A.

by
Edith B. Kent
Hydro News

WITH the opening of its modern, up-to-date office on February 10, the staff of the Merlin Rural Operating Area officially took over its new headquarters.

Marking the opening of the building, which had been occupied since January 31st, was an official dinner, the showing of films provided by the Promotion Department of the H.E.P.C., and a general tour of the building under the supervision of H. W. Sweazy, R.O.A. Manager. The film showing and the tour were open to the public, and were attended by approximately 200 persons.

The office, a low-slung, clean-cut building, measuring 38 feet by 95 feet and built of red brick and cement blocks, provides accommodation for Mr. Sweazy, two clerks, and eight linesmen, and additional space for the inspection department, which is expected to move in in April.

Construction was begun in the fall of 1947, and the plans adopted were those of Ian S. Stubbs, former Merlin Superintendent, now Consumer Service Superintendent for the Western Region.

At the front is the cheerful general office, with its Tuscany red rubber-tiled floor, white plaster walls, wide windows, light brown woodwork and furniture gleaming with touches of chrome and arborite. Like the two private offices, it is air-conditioned and heated with filtered air through vents in the Donnacoustic ceiling, designed to absorb noise.

Behind the offices are the meter room, workshop and garage, which provide space for Merlin's three Hydro trucks and ample facilities for all repair jobs.

Present at the official dinner were Mr. Sweazy; Mr. Stubbs; Clayton Simpson, Chairman, Board of Police Trustees of Merlin; Leonard Renwick and W. R. Gray, Trustees; A. E. Pegg, Ralph Dawson and H. O. Jones, former Trustees; S. B. Campbell, Secretary of Merlin; Wilbur Marshall, Editor of the Merlin *Standard;* Adam Smith, Consumer Service Engineer, Western Region; C. E. Hodgson, Western Regional Accountant; R. B. Jackson and E. W. Smithson, Consumer Service Superintendents, Western Region.

Following the dinner, the public was invited to Merlin's Agricultural Hall to attend a showing of three films, including "Niagara the Powerful," by R. J. Cooksley of the H.E.P.C.'s Promotion Department. Thence they proceeded on an inspection tour of the new building, where refreshments were provided. Comments on the building were most favourable, indicating that Merlin's citizens are justly proud of their Hydro's new home.

NEWLY-OPENED OFFICE of Merlin Rural Operating Area is modern, spacious and cheery. Here, Manager H. W. Sweazy looks over record book in which Betty Gray makes an entry, while Kingsley Graham watches from the sidelines. Official opening of building took place February 10.





WEIGHTY MATTER is being settled (left) by tiny Tim Holmes, son of the Merlin line foreman. Happily munching doughnuts are Tommy Maynard, Leland Jasper, and Timmy's brothers, Ted and Larry.



EXTERIOR VIEW of Merlin's new R.O.A. office building, officially opened February 10, is shown above with Harold W. Sweazy, Manager, at the door.

RIGHT is Barney
rsh, key man in
rlin's meter de-
tment. Camera-
Barney was fin-
talked round by
dro's persuasive
photographer.



MANAGER SWEAZY takes time off from his work (below) to smile at the Hydro News camera.



ILING GROUP of
esmen below is
nposed of Bill
imes (foreman),
rnet Wellwood,
uck Carnahan,
n Beckstead, Ron
ine, Cliff Hurley
d Max Smart. In
nt is Sandy
Beckstead.





by DR. R.W.I. URQUHART MEDICAL DIRECTOR

EXERCISE
Article II

In the last article on exercise it was pointed out that physical exercise was necessary to keep the heart muscle in good condition. It was further pointed out that physical exercise is also necessary for the well-being of the skeletal muscles. As mentioned before, muscle cell activity produces certain waste products which must be got rid of. The increased circulation which accompanies exercise helps in this process. Occasionally, particularly if an individual is out of condition, he finds that his muscles become stiff and sore after exercise. The waste products are being produced in such quantity that in spite of the increased circulation they can not be removed rapidly enough. This usually means that too much exercise has been taken at the one time. Gradually increasing the amount of exercise over a period of time usually controls this type of discomfort.

Age is of course a controlling factor in exercise. Everyone who has watched a small baby is astonished at the almost constant movement exhibited during the waking hours. These movements contribute to the growth and development of strength in the muscles. Small children seldom walk when they can run, or sit when they can walk. Their energy at times seems unbounded, but it all is part of the growth and development of muscle tissue. The teen-age group are interested in sport and dancing. It is only when the responsibilities of later life come on that sedentary habits develop. It is in this period that moderate exercise is of the greatest value. Its contribution to good health can not be overestimated. The tendency to take one's exercise sitting down should be resisted.

Time can always be found for some type of healthful exercise if it is felt to be of sufficient importance. If the exercise is obtained in a form that gives pleasure and satisfaction so much the better, for it then contributes to mental as well as physical health. The individual who exercises regularly not only gains a sense of well-being obtainable in no other way, but also adds materially to his chances for living to a ripe old age.

Kind of Exercise

A question that is often asked is what kind of exercise should I take up? The reply to such a question must vary with each individual. Many factors such as age, sex, physical condition, nature of work, etc., obviously must be taken into consideration. It is only when these are summed up that the answer can be given.

The younger age group, as pointed out before, can obtain plenty of healthful exercise in sport.

There are a number of groups in the Hydro engaged in winter activities and they deserve your participation and support. In the summer other groups are interested in baseball, tennis, lawn bowling, swimming, etc., and you should look these up. They not only provide exercise, but what is just as important, plenty of excitement and fun. This all contributes to relaxation and your general well-being.

There are many who, while still in the younger age group, are in the process of establishing homes. They may be tied down a bit more and for one reason or another are unable to participate to a great degree in these group activities. They can, however, get plenty of exercise in gardening, walking, hiking, or making repairs around the house. Even shovelling snow is good exercise if there is any to shovel. Work as well as play provides good exercise and the sedentary office worker would do well to find some work to do about the house just for the sake of the exercise it affords him. The office worker once an athlete, who now neither makes nor finds time to continue some form of exercise, has taken the first step toward physical degeneration.

The "life begins at forty" group, unless they have been physically active must use some discrimination in their choice of physical exercise. This age group can no longer play strenuous competitive games with impunity. They can bowl, play golf, curl, garden and many other similar activities provided they "get into condition" gradually. Once they are in condition they need have no fears. It is the weekend athlete who runs into danger. It is the daily stint of exercise that keeps the individual out of trouble and is of the most value.

From fifty-on the kind and amount of exercise to be taken should be prescribed by the family physician. At least the individual should be examined regularly to see if it is safe for him to continue doing the sort of thing to which he has been accustomed. It is in these years that degenerative changes begin to appear. They do not develop in all people at the same time nor do they progress at the same rate, so that a check becomes advisable. Many of these degenerative changes warrant some limitation in physical activity. Only a doctor can assess these changes at their true value and so advise the patient as to what he can or can not do. Wise is the man who takes his advice.



Courtesy of Canada's Health and Welfare

DIGGING FOR HEAT

(Continued from page 22)

adjacent to year-round flowing water or to deep wells in which water is renewed at moderate rates by underground circulation. Such conditions are not generally available, though some favourable sites certainly can be located, especially in areas not heavily populated. City water would be generally too expensive as a heat source and would introduce problems of supply and disposal.

For domestic heating the main hope seems to be in the use of the earth as the heat source. However, even if electrical energy be available and at reasonable cost, before earth heat pump installations can be fully justified, much remains to be learned about the amount of earth heat obtainable. Local subsoil conditions, varying greatly from place to place, evidently will be a most important factor when the feasibility of an earth heat pump at any particular site is under consideration. In addition to the measurements now being made on the local installations, data to shed light on the practicability of the earth as a heat source are being accumulated at many widely scattered locations, especially in the United States.

Present Status

For home heating by heat pump operation, the major problem remaining is how to obtain economically, especially in congested areas, an adequate supply of low-grade heat. Prevailing opinion seems to be that at the present state of development, unless the earth proves to be an economical heat source, widespread application of the heat pump principle for heating houses in these latitudes is unlikely. However, the prospects for more industrial utilization of formerly discarded heat are encouraging.

As any extensive adoption of the heat pump for home heating would have both great social and economic significance in providing almost ideal heating and in conserving the world's dwindling fuel reserves, its possibilities are being fully investigated. On the asset side, electrically operated units could provide automatic summer cooling, as well as heating without storing or handling fuel or waste products of combustion. A large portion of the heat would be obtained from supplies replaceable by the sun and the earth's interior. At reasonable efficiencies, if cheap electrical power be available, operating costs would be relatively low.

The main disadvantages, at present, are the uncertain availability of low-grade heat sources and of adequate electrical energy and the high initial costs of equipment and installation. Mass production and standardization of units would permit reduction of costs below those of present experimental heat pumps.

Any future developments which might lead to general use of heat pumps would most certainly have implications quite significant to Hydro. The increased electrical demands could become very important and additional supplies of electric power might be required.

Veteran Hydro Official Dies



SECRETARY-TREASURER of the Niagara Falls Hydro-Electric Commission for the past 36 years, James W. Bayliss died April 21 in Greater Niagara General Hospital. Born in 1881 at Oxford, England, Mr. Bayliss came to Canada in 1901. He soon took up residence in Niagara Falls, Ontario, where he was employed by the Grand Trunk Railway. In 1913 he joined the staff of the Municipal Electric Light Plant, continuing as secretary-treasurer when it became part of the Hydro system. Surviving are his widow, a sister and three brothers.

THIRTEENTH BILL

Ontario Hydro municipalities have received a refund totalling $2,596,798 from The Ontario Hydro-Electric Power Commission this year. This refund, made annually and known as the Thirteenth Power Bill, represents the difference between the interim amount collected each month during the year, by the Commission, covering the cost of power and the actual cost of power purchased by the various Hydro municipalities as determined at the end of the operating year.

WALKERTON SECRETARY DIES

•Mary Catherine Foley, secretary of the Walkerton Hydro Commission for the past 18 years, died recently in St. Joseph's Hospital, Hamilton. Miss Foley was well known in the community, and left many friends who regret her sudden passing.

DES JOACHIMS

(Continued from page 24)

Rivieres-Klock diversion some 35 miles upstream from the development.

Three Main Camps

The three main camps at Des Joachims have excellent accommodation for their personnel. This accommodation includes cafeterias, comfortable bunkhouses and staff houses with showers and laundries, recreation buildings and a hospital. Recreational facilities include bowling, billiards, badminton, ping-pong, baseball, horseshoes, hockey, skiing and dancing. Reading and writing rooms are also available and a well-stocked commissariat carries certain types of men's wear, cosmetics, candy, soft drinks, tobacco, etc.

According to present schedules, it is fully expected that the first four units of Des Joachims will go in operation in July 1950, and the remaining four in 1951. As one looks around the enormous project it is certainly apparent that every effort is being made to meet these schedules or, as some anticipate, even better them.

CONSUMPTION INCREASED

More Hydro power was used in North Bay in 1948, following the general trend. Consumption rose by over two million kilowatt hours, from 24,267,884 k.w.h. in 1947 to 26,355,301 k.w.h. in the following year.

Classified Ads

THE Leamington Hydro-Electric Commission invites applications for position of Superintendent with Engineering qualifications, graded salary scale in accordance with ability and position.

Apply to Miss Freda Johnson, Secretary.

ARTICLES FOR SALE

ONE Transformer—No. 122342 E N 41783:
Type H cycles 25 KVA 15;
Volts 2200 — 550;
Canadian General Electric.

•

ONE Transformer—Canadian Westinghouse:
Type S — 15 KVA;
2200 — 550/275; rebuilt —
25 cycle;
Style No. H 4390, Serial 20311.

•

ONE Transformer—Canadian Westinghouse:
Type S — 15 KVA;
2200 — 550/275 — Original condition;
25 cycle — operable;
Style No. H 4390, Serial 20308.

Apply Adam Smith, Consumer Service Engineer, Western Region, H.E.P.C., 340 Wellington St., LONDON, Ontario.



Blossoms "do something" to a home. Their beauty can give us a real lift. If you cut a few boughs of wild cherry blossoms for the living-room bouquet, buy a small package of floral preservative from the florist shop to put in the water. Your flowers will keep for 4 or 5 days longer. This amazing chemical powder keeps all blooms, except those that grow from bulbs, days longer.

* * *

With spring not only in the air but right in the market, perhaps even in your own garden, you'll want to serve fresh rhubarb. If you cut the washed rhubarb at a slant and do not peel it, the pieces remain whole. Stir the sugar in when the fruit is raw and turn down the heat to simmering point. This is a sure method of serving rhubarb that looks like rhubarb.

* * *

Cress remains perky and green when it is put in a bowl with an inch of cold water in the bottom and a cover on the top.

* * *

A wheel barrow for gardening saves considerable unnecessary work and time. Don't you think the same value should be placed on the use of a sturdy tray in the carrying of dishes from dining room to kitchen?

* * *

Heaven forbid that you ever burn the crust on the cake you bake in an electric oven. But if this should happen to you, remove the crust with a grater rather than a knife.

A combination of rhubarb and strawberries tastes as fresh as a breeze. Rhubarb will be an appetite-teasing pink if you are careful to cut stalks sharp across without peeling before cooking. Choose ripe strawberries, rinse before hulling and mix these raw with tartly sweet rhubarb and juice.

* * *

You can please most people by serving strawberries every day while they last. How about hot waffles sandwiched with sweetened berries for breakfast on Sunday? Or strawberry jelly with plenty of big berries in it and around it for dinner? Or strawberry souffle for supper—or fruit salad?

* * *

Certain people are allergic to the flavour of spinach. If this is the case, try cooking it in lots of water. Drain as soon as tender—never overcook. The greens will be delicate in flavour.

* * *

Mushrooms from the beds of the commercial growers do not need to be peeled before cooking. Wash them under the tap and slice into the frying pan with 2 tbsps. of butter in it. Incidentally, raw mushrooms rinsed in salted water, drained, sliced and tossed together with French dressing, are a great addition to a raw vegetable salad.

* * *

The most economical vegetable of the year is dandelion greens. After thorough washing, cook as you do spinach. Heat 2 tbsps. bacon dripping and 4 tbsps. cider vinegar and pour over the drained cooked greens. Serve in a warm bowl with a sieved hard-cooked egg and a few pieces of crisp bacon.

Someone asked, "Would I like an avocado?" Well we had to stop and think. An avocado is a pear that leaves a tart taste in your mouth. We serve them on rare occasions. The fruit is halved and seeded, then the fleshy part is removed with a spoon and cut into cubes. Toss these chunks with diced celery, flaked crab-meat and a bracing mixture of Worcestershire sauce, tabasco sauce, salt and lemon juice, then pile the salad back into the shells.

* * *

The best fried trout is that fish prepared and cooked over a bonfire at the river bank. For those who are lucky enough to have the chance to go fishing and enjoy this perfect treat, here are a few tips: 1. To scale fish, hold it by the tail, have your knife at an angle and work towards the head. If the fish slips, salt your hands; this will give you a better grip. 2. To clean: Make a split down the belly from the gills to the vent. Cut off the head and trim the tail. Lift out the "innards" and wipe the inside of fish with a cloth wrung out of cold water. Do not soak fish in water. 3. To bone a fish: Arm yourself with a sharp knife! Beginning at the tail, work the knife between flesh and backbone. Keep the knife against the bone and do one side, then the other. 4. To cook trout: Heat lots of butter in pan until melted. Cook fish flesh down 5 minutes, then turn for another 5 minutes.

* * *

Potato chips are easily browned if they are blanched in boiling water, drained on towel, before putting into the hot fat.

* * *

First aid for grass stains! For non-washable fabrics sponge with 1 cup of denatured alcohol, weakened with 1 cup of water. Rinse and re-apply if necessary.

CANNING PINEAPPLE

Remove the outer covering of the fruit by slicing downward with a strong, sharp knife. Take out the eyes with a sharp paring knife. Standing the fruit on end, slice in one inch slices as far as the core. Cube in ½ inch pieces.

Pack into sterile jars; pour over a boiling syrup made by boiling ½ cup sugar and ½ cup honey with 3 cups water for 5 minutes. The syrup should come within ¼" of top of the jars. Insert a knife around the inside of the jar to enable any bubbles to escape. Scald the rubbers and put into place. Partially seal (tighten the screw top, then release half a turn).

Process in hot bath, 35 mins. for quarts; 30 mins. for pints.. Count time when water begins to boil vigorously, not just steam. The jars should be covered by an inch of water. When time is up, remove from bath, tighten, seal and cool.

DISTAFF VIEW

(Continued from page 12)

of Toronto, had broken her leg some time previously, and was still confined to the camp hospital. The press trip coincided with Susan's birthday, and plans were afoot to present her with a mammoth birthday cake, baked by "Rocky" and subscribed to by her fellow-workers. The visitors didn't see the cake, but they did see Susan and the spotless, cheerful interior of the modern 30-bed hospital. "It would be a pleasure to be sick here," said one of the reporters.

Approximately 550 new Canadians are employed on the Des Joachims project. Some of them have been in Canada only a few months, and have a very limited knowledge of the English language. Faced with this problem, Hydro set to work to provide a school which would combine the teaching of English to adults with the ordinary schooling of the children of the Hydro-born village of Rolphton.

The newspaperwomen "sat in" on one of these English-teaching sessions, and were very much impressed with the progress made by the grown-up pupils. In particular, a surgeon from Latvia, in his middle fifties, was the object of their admiration. Two months ago he couldn't speak a word of English; now he converses very intelligently, though somewhat hesitantly, on a great variety of subjects.

The adult classes are housed in the recreation building, which includes billiard tables, excellent bowling alleys, and a snack bar that serves everything from pop to potato chips. Later in the evening the press party was to try their skill at five-pins, but at the moment the ladies proceeded to one of the guest houses for a short siesta. As up-to-date as the hospital, the compact little frame building drew many admiring comments.

Ravenous appetites, the result of a day in the bracing air of Des Joachims, were again thoroughly appeased at a steak dinner, where an additional attraction was provided in the form of entertainment by a choir of Estonians under the direction of Hesno Elken, singing in their native language and, as a courtesy gesture, "K-k-k-katy" in English. Solos were given by Sasha Jukas, a potential Frank Sinatra, accompanied on the accordion by Gene Nicol, and bashful Peter Pastach was persuaded to play two numbers on his accordion. These three young men are also new Canadians.

Despite the disparity in language, the reporters noticed, there is a tremendous feeling of camaraderie among the Hydro employees at Des Joachims. The main reason for this, one of the ladies suggested, is probably the satisfaction inherent in doing an exacting job well, combined with the realization that Hydro is endeavouring to make life as normal and pleasant as possible for all those employed on the project.

Poison Ivy Rampant

Poison ivy is rampant in ditches and in the bush in the Southern part of Ontario.

This warning, contained in a report issued by the Electrical Employers' Association, points to the necessity for all men who work in these places knowing poison ivy on sight. Should contact be made with the plant, the report states, a thorough washing in hot water and soap should be carried out as soon as possible and, if a rash develops, a doctor should be called. It is also emphasized that so far, no general "cure" has been found to be effective.

The Association, which is primarily interested in fostering "Safety First" practices at all times among utility employees, urges that utilities do everything in their power to see that men are adequately trained and that immediate and competent supervision is provided.

"Statistics and the dropping accident curve are cold things," states the report. "The important thing in accident prevention is to be sure that each employee is able to carry out his work in such a way that he can return to his family at the end of the day without accident. That is the goal we are seeking."

NEW LIGHTING AT WALKERTON

New street lighting has been authorized for Walkerton, it was announced recently. At a special meeting of the Council, permission to make the change was acted upon, the contract for the supplying of new lighting fixtures being awarded to a Toronto firm. The new lamps will be of 500 watts and will be mounted on six-foot mast-arms, which will be mounted on wooden poles. The new system is expected to be installed by the early summer, and will be on the multiple instead of the series principle as previously.

WILL EXTEND RURAL LINES

About 230 miles of new rural Hydro line will be built in the Owen Sound area this year, R. H. Tideman, Manager of Owen Sound R.O.A. reported recently. Most of the new line will serve farming districts.

10th ANNIVERSARY

(Continued from page 11)

LeGallais, St. Catharines; B. T. McCann, Simcoe; H. R. Whale, Toronto and J. N. Stanley, Welland.

Founder of Club

One of the highlights of this season's activities was the annual Ladies' Night held at the Royal Connaught Hotel in Hamilton on Wednesday, April 13th and attended by more than 200 members and their ladies. President J. L. Cartwright proved a witty and able chairman for the banquet. He introduced the club founder, C. H. Hutton, and paid tribute to his leadership throughout the years. President Cartwright surprised the first President by producing Mr. Hutton's honorary Indian Chief's headdress and placing it on the founder's head.

Speaking briefly, Mr. Hutton recalled some interesting events in the club's history and emphasized that the constant objective of the organization was to bring into closer personal relationship those engaged in electrical and kindred industries, thereby promoting good feeling and comradeship. Mr. Hutton also introduced the distinguished members and their ladies and other guests at the head table.

Following a program of entertainment, dancing was enjoyed in the Ten o'Clock ballroom.

THREE NEW STATIONS

In preparation for frequency conversion, three 60-cycle, 115,000-volt transformer stations are to be built in Western Ontario to be ready for service in 1950. Initially, 60-cycle power will be supplied in this area from Polymer Corporation and from the frequency changers at Westminster T.S. while 230,000-volt, 60-cycle power will be brought later in 1950 directly to Westminster T.S. from Hydro's development at Des Joachims. The frequency changers will permit the interchange of power between the 25-cycle and 60-cycle supplies. The new transformer stations will be located at London, Seaforth and Strathroy. The new station at London is known as London-Nelson T.S.

•In its annual report, the Ottawa Hydro Electric Commission records a net surplus of $119,731. Revenue for the year amounted to $1,330,228 while total expenditures were $1,312,687.

HYDRO CHANGES BILLING METHOD

The commission has changed its method of billing for power supply, Chairman Robert H. Saunders announced recently. In the future, all accounts for power supplied to municipal hydro systems and industrial power customers will be based on a rate per kilowatt instead of a rate per horsepower. Municipal hydro systems will also render power accounts to their customers at a rate per kilowatt. The change is already under way throughout the province. The net amount of the customer's account will be similar to the present amounts. This change uses the electrical unit of demand, the kilowatt, instead of the former mechanical unit of horsepower. Greater simplicity and ease of calculating bills will result.

NEWS IN BRIEF

NEW TRANSFORMER STATION

•Hydro Manager A. W. H. Taber announced recently that a new substation with a capacity of 5,000 horsepower is now operating in the west end of Fort William. The new station was built to meet increasing demand for electric power created by extensive building development in Fort William. Another substation is under construction in the east end of the city.

DISCUSS NEW BUILDING

•Discussion at a recent meeting of the Alexandria Public Utilities Commission centred on the new building the Commission hopes to build this year to answer its requirements. The Commission would build only what is necessary at the present time, leaving room for future additions by the town if the council decides to centralize all departments.

POWER DEMAND UP

•Power demand in Brantford soared to a new peak in February, reaching the highest total ever recorded for one month in the city's history. According to Norman Grandfield, Assistant Hydro Manager, consumption was double that of 1936. Peak demand for the month was just over 22,500 kilowatts (30,000 hp) and daily consumption was reaching 373,000 kilowatt hours.

PLANNING BRONZE PLAQUE

•Kitchener's Hydro building may soon be decorated with a bronze plaque bearing the names of commissioners in office at the time the building was erected. Although the project had been agreed upon several years ago, it had been delayed by wartime shortages. Of the commissioners in office when the building was erected, only two are now living.

"NEW LOOK" FOR PRESCOTT

•Prescott may soon achieve the "New Look" in lighting. Plans have been made to improve present street lighting facilities by replacing the present lamps, which were installed in 1913. It is believed that there will be little, if any, extra cost in the power consumed by the new lights as they will replace the present double fixtures and eliminate some 300-watt lamps. Cost of the improvements will be borne by the Commission from its reserves.

ELECTRICITY FROM WIND

•British scientists are at work on plans to provide a modern windmill to supply industry with wind-generated electricity. A research site has been established in the Orkney Islands, and others are being prepared on the coasts of England, Scotland and Wales, where wind directions and velocities will be studied.

When enough information has been collected, according to London papers, the scientists will begin construction of Britain's first large-scale wind turbine, with a generating capacity of 2,000 kilowatts. A three-bladed fan will replace the four large sails usually seen on old-time windmills, it is reported. The project is supported by the Electrical Research Association and various government ministries.

RURAL WORK UNDER WAY

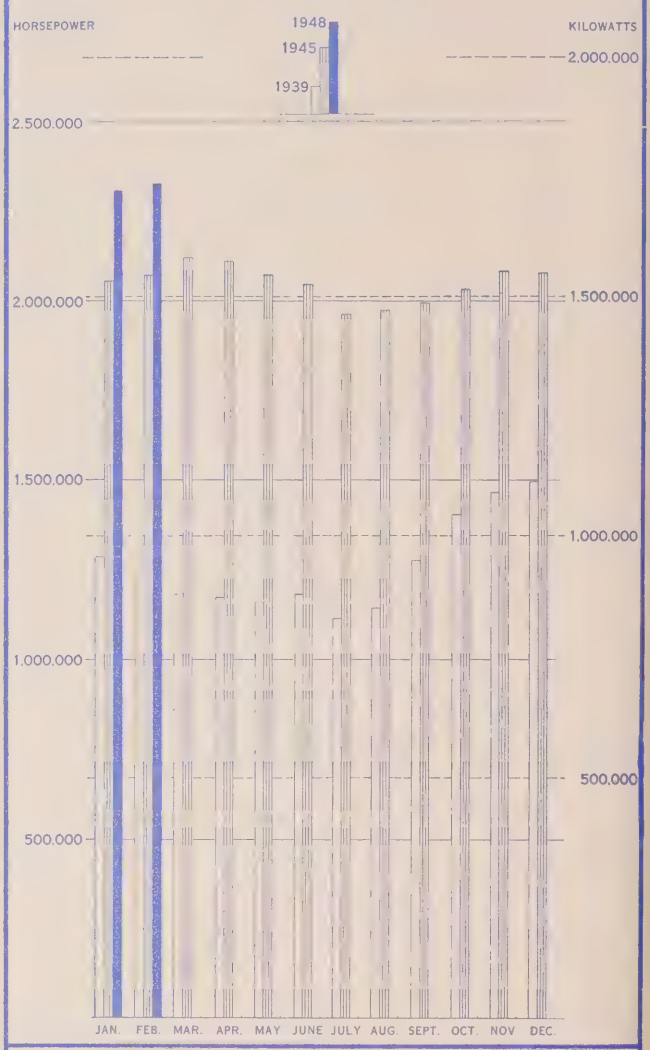
•Work on the completion of 50 miles of new Hydro line is now under way in the Brantford rural hydro area. S. A. Ord, Superintendent of that Rural Operating Area, reported recently that the new lines would result in almost complete service to that area, as extension has been steady during the last few years.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW FEBRUARY, 1949	FEBRUARY, 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System	1,842,422	1,807,414	+ 1.9
Thunder Bay System	131,149	116,326	+ 12.7
Northern Ontario Properties	207,162	168,436	+ 23.0
TOTAL	2,180,733	2,092,176	+ 4.2
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System	1,739,592	1,664,404	+ 4.5
Thunder Bay System	142,249	113,326	+ 25.5
Northern Ontario Properties	211,677	168,086	+ 25.9
TOTAL	2,093,518	1,945,816	+ 7.6

Lighter Lines



"As near as I can figure it . . . one of them gets two friends who buy a soda each . . . meanwhile, the one who got them moves up a seat . . . then they in turn each get two more friends who . . ."

"Did you hear about the politically-mined ion who heard there was going to be an electron?"

"No, what happened?"

"He went to the poles and volted."

* * *

"What's in the Ming vase on the mantel?"

"My husband's ashes."

"Oh, I'm sorry. I didn't know he was dead."

"He's not. Just too lazy to find an ashtray."



"Don't get excited! You're going to get all that's coming to you."

Teacher: What's the matter, Georgie? Why are you crying?

Georgie: Oh, I hate school, and Daddy says I have to stay till I'm 14.

Teacher: Well, that's not so bad. I have to stay till I'm 65!

* * *

At the beginning of his lecture tour, a clergyman asked a young reporter not to publish any of the lecture, as it might detract from the attendance at the other meetings.

Accordingly, the reporter's story read as follows: "The vicar gave a very interesting talk, but unfortunately his stories cannot be printed."

* * *

It happened during the housing shortage (don't most things these days?).

Walking along the river bank one day, a man saw a friend of his struggling in the water and uttering desperate calls for help. Making no effort to save him, the man rushed back to town, contacted the friend's landlord, and asked for his apartment.

"Too late," replied the landlord. "It's already been rented to the man who pushed him in."

* * *

Mary: You say you take your medicine in reverse?

Joan: Yes. I very seldom take a pill to get rid of a headache, but I often take a headache to get rid of a pill.

* * *

Two women were discussing concrete-pouring operatings at a Hydro development.

"What I can't understand," said one, "is how they can pour concrete just as fast in winter as in summer. Doesn't concrete flow more slowly when it's cold weather?"

* * *

"He was getting along fine in the hospital till he got an awful bruise."

"What happened?"

"He took a turn for the nurse."

* * *

An American tourist was visiting a cloister in the Old World where the flame on the altar had been burning for centuries.

"You say this thing has been going for 400 years?" he asked the nun.

"Yes, monsieur," she replied proudly.

"Pouf! Well, it's out now," said the American.



"I'm afraid we're not for each other—you're AC and I'm DC."

Barber: You say you've been here before? I don't remember your face.

Customer: Probably not. It's healed up now.

* * *

A drunk walked up to an automat in New York City, deposited two nickels, and out came a ham sandwich. He kept on, and after putting in twenty nickels, had ten ham sandwiches.

Just then the manager came up and said, "Don't you think you have enough now? Why don't you stop?"

"What?" said the drunk, "stop when I'm winning?"

* * *

Murray Moron says: Sandwich spread is what some people get from eating between meals.



"Spring must be weak, he's slicing the cheese with it."



HYDRO News



BRARY
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VOL. 36 JUNE, 1949 NUMBER 6



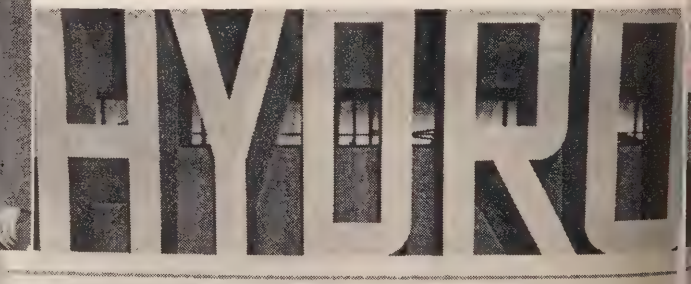
MANY NATIONS were represented at the second Canadian International Trade Fair during June. The international character of this event was reflected in the flag-bedecked facade of Toronto's Coliseum.



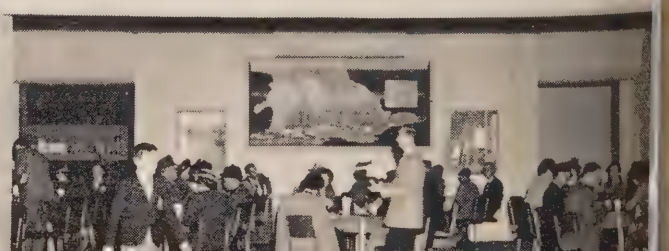
ENING CEREMONIES were witnessed by a large group visitors from many parts of the world as well as Toronto zens. Rt. Hon. C. D. Howe, Canada's Minister of Trade d Commerce, is shown speaking during the inauguration ceremony.



VISITORS TO the Fair displayed keen interest in the large framed photographs depicting construction progress at Hydro's new developments across Ontario.



HYDRO'S EXHIBIT at Canada's second International Trade Fair featured a large and comfortable lounge room where hundreds of visitors took the opportunity to study the Commission's expansion program as depicted in enlarged photographs which lined the walls.



HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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SUBSCRIPTION: $2.00 PER YEAR

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COVER SHOTS

IN keeping with the spirit of June, the front cover this month depicts Niagara Falls, one of Ontario's chief tourist attractions, in a camera study by J. Burt Helling, Hydro staff photographer. Equally interesting is the back cover which shows what E. A. Johnston, another Hydro staff photographer can do with a camera and an avenue of trees. This particular shot was taken at the Ontario Forestry Station at St. Williams.

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JUNE, 1949

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HONORABLE MENTION AWARD

To HYDRO NEWS

Of HYDRO ELECTRIC POWER COMMISSION OF ONTARIO

Editor WILLIAM RATTRAY

In recognition of
exceptional accomplishment
in achievement of purpose,
excellence of editorial content,
and effectiveness of design

INTERNATIONAL COUNCIL
OF INDUSTRIAL EDITORS

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ADVERTISING MANAGER, ATLANTA GAS LIGHT COMPANY

1949

FOR THE second year in succession Hydro News has received an award in the international contest sponsored by the International Council of Industrial Editors. A reproduction of the Award received this year is shown above.

Jim Hunter

JIM HUNTER of CFRB, the dean of Canadian newscasters, has signed off.

While Jim was known personally to thousands of people in all stations of life in Canada, his cheery, down-to-earth voice and rousing "Good Monday Morning Everybody" were known to hundreds of thousands more through the magic of radio.

Jim was a native of Aberdeen, Scotland. He had completed his 10,000th newscast two years ago. More recently his familiar voice was heard by a large and extensive radio audience on Tuesday evenings at 10.45 when he presented a series of popular broadcasts entitled "Hydro Highlights." For these broadcasts, Jim selected "Cool Water" as the theme music to emphasize the importance of adequate supplies of water for the generation of hydro-electric power.

In that series he had sought to interpret to the layman in simple, homey language and style, some of the many outstanding technical achievements and unusually interesting operations associated with Hydro's twenty-four-hours-a-day service to the people of Ontario.

by
The Editor

It was the privilege of the writer to have known Jim not only as a fellow newspaperman and newscaster, but to have acted as his guide on his weekly visits to Hydro properties. Prior to a visit, he would usually phone and say: "Look, I would like to tell the folks something about such and such this week, can you line up some of the Hydro lads who have the answers?"

The "Hydro lads," some of them engineers who are pre-eminent in their respective fields, looked forward with anticipation to these pre-broacast sessions with Jim whose quaint, unorthodox approach to highly technical subjects aroused considerable interest and good-natured amusement. Jim never pretended to be a technical man. He would say: "Look, you lads here at Hydro have the technical know-how. I'm just a common garden layman. Now, tell me what makes this do-funny tick?"

The "do-funny" discussed by Jim in one of his most recent Hydro broadcasts was, in his own words, "a real toughie." It was a story on the highly complex network analyzer. While Jim had to take several verbal runs at it, he finally came up with a broadcast which interpreted this piece of electrical wizardry in down-to-earth terms and in the inimitable Jim Hunter style. His effort brought the sincere and spontaneous congratulations of the engineers who had sat in on the pre-broadcast sessions.

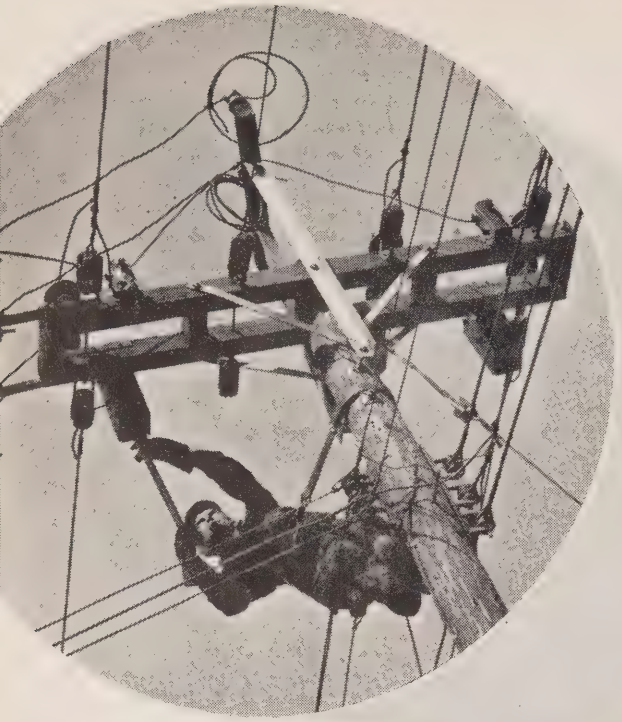
One of Jim's happy hunting grounds in his quest for "Hydro Highlights" was in the lab on Strachan Avenue where his familiar figure, cheery voice and quiet and quaint expressions will be long remembered by many Hydro research men.

Perhaps, one of his most remarkable feats was his ability to sit and listen, throw out a question here and there, never make a note and then go on to his typewriter and produce a broadcast.

When visited by the writer the day before he died, Jim, although very weak and unable to talk much, was thinking about a story for the next Hydro broadcast.

To his widow, his 19-year-old daughter, Barbara, and young daughter, Bonnie, go the thoughts and sympathy of all Hydro folk who had the privilege of meeting and knowing Jim.

At this time, in paying a last tribute to Jim, not only as a newcaster and gentleman, but as a personal friend, we think it more than appropriate to recall the theme with which his name was associated for so many years—"A Hunting We Will Go."



FIRST CONVERSION COMPLETED

Historic Ceremony Marks Change-Over From 25 To 60 Cycle In Section Of East York Where Chairman Robert H. Saunders Makes Cut-Over



ABOVE—This is what happened at 9 a.m. on the morning of May 18 when a lineman cut off 25-cycle power to the area in East York which was converted to 60 cycle.

BELOW—Watching the lineman in action are members of the East York Council and Hydro Commission. Included in the group are Reeve John Warren of East York, Albert Jennings, Chairman of the East York Commission, and W. R. Harmer, Consumer Service Engineer, Frequency Conversion Division.

AT three minutes to 11 o'clock on the morning of May 18, Hydro Chairman Robert H. Saunders pulled on a heavy pair of insulated gauntlets, and at precisely 11 o'clock he stepped forward and grasped the handle of a long, heavy, iron switch.

The crowd around the Chairman strained forward, watching intently, and press and movie photographers went into action as he braced his shoulders and pulled, the switch describing a semicircle in its course from the "off" to the "on" position.

Enacted at a new substation, designated as "J" and located at Dohme Avenue and O'Connor Drive in the northeast fringe of East York Township, this event was both symbolic and historic in character.

When Mr. Saunders swung over the switch, the first of Ontario's 25-cycle areas had been converted to 60-cycle and the first of Ontario's 25-cycle consumers had started to enjoy the benefits of the new frequency which, progresisvely, over the next ten to twelve years will become available to consumers now using 25-cycle power in the province.

"This is one of the most important occasions that has happened in this province," stated the Hydro Chairman in addressing the gathering comprising members of the East York Council and Hydro Commission, local Hydro consumers, and key Commission personnel and newsmen. "The standardization of frequency," he continued, "will bring with it tremendous benefits to the people of this section of Ontario and, eventually to all consumers in the 25-cycle areas. There are 788,000 consumers of Hydro who, within the next ten or twelve years, will be changed from 25- to 60-cycle."

The conversion procedure followed in this section of East York will set the pattern for the other 25-cycle areas in Southern Ontario where the $200,000,000 frequency change-over program is now proceeding, area by area.

The fact that impressed Hydro News was the way in which this vast program is being organized down to the last detail and number given to the smallest replacement part while tools used in effecting the change-over of motors range all the way from heavy power-driven equipment down to an almost hairline tool used by a watchmaker. Everything is so planned and organized that each replacement part seems to be ready at a given time and place, all carefully labelled, coded and described.

The actual work of changing over consumer equipment is being done by the Canadian Comstock Company whose engineers and technicians work under the supervision of the Commission's Frequency Conversion Division, headed by Harry H. Leeming.

One can form an impression of the magnitude of the program when one realizes, as Mr. Saunders pointed out, that it will involve hundreds of thousands of consumers in homes, farms, stores, office

(Continued on page 6)

by

The Editor



TOP LEFT—A large and representative gathering was in attendance when Chairman Robert H. Saunders, at exactly 11 o'clock on May 18, threw the switch to start the first 60-cycle service in an area of East York. At the Chairman's side are Albert Jennings and Reeve John Warren.





ABOVE—Presentation of an electric clock to Mrs. Russell Taylor, first housewife in East York to receive 60-cycle service, marked this historic event. It would appear that Chairman Robert H. Saunders has a way with the ladies, judging by the reception he received from Valerie Taylor aged three. Included in the group are Reeve John Warren, R. L. Hearn, General Manager and Chief Engineer, H.E.P.C., Albert Jennings and H. H. Leeming, Director of Frequency Conversion.

•

CENTRE—Specially-designed platforms at the rear of the mobile trucks facilitate loading and unloading of consumer equipment. This photograph was taken as Canadian Comstock Company personnel were unloading a refrigerator which had been converted for 60-cycle operation.

•

LOWER LEFT—Considerable interest was aroused when this old-timer in the washing-machine field was brought into the Canadian Comstock Company's premises for conversion to 60-cycle operation. Those in the group are W. G. Robertson, Dick Gamache, Victor Manser, Tom Shook and J. J. Jeffery.

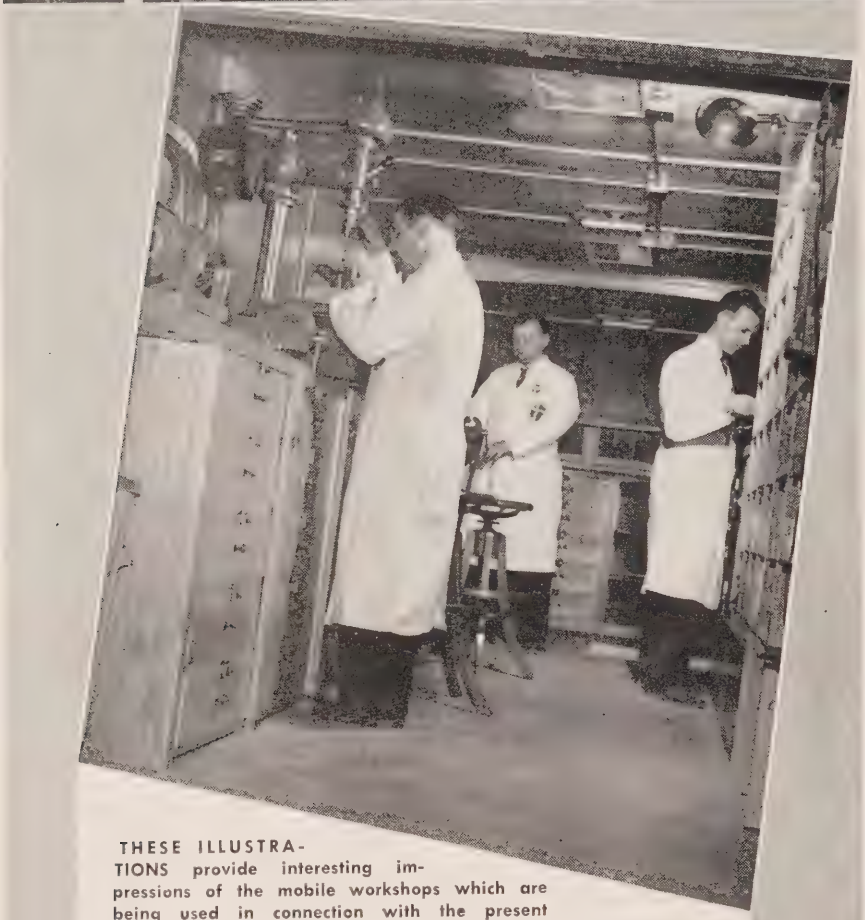
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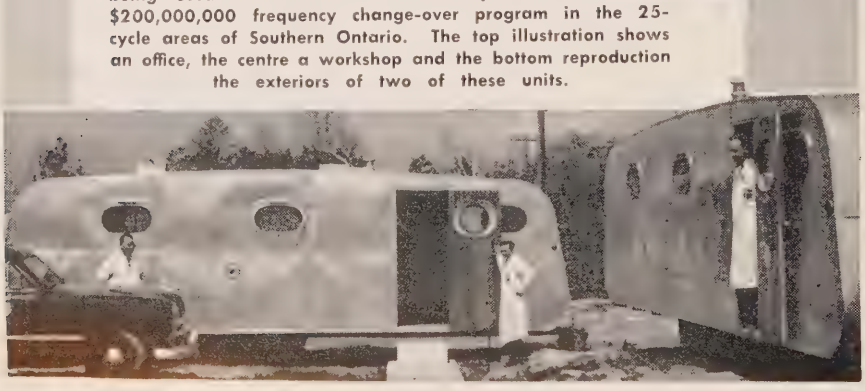
BELOW—Included in this group are many key representatives of the Canadian Comstock Company whose personnel, under the direction of Hydro's Frequency Conversion Division, are responsible for converting frequency sensitive equipment.











THESE ILLUSTRATIONS provide interesting impressions of the mobile workshops which are being used in connection with the present $200,000,000 frequency change-over program in the 25-cycle areas of Southern Ontario. The top illustration shows an office, the centre a workshop and the bottom reproduction the exteriors of two of these units.

FIRST CONVERSION

(Continued from page 4)

buildings, hospitals, farms and factories. In motors alone conversion will involve some 1,800,000 units ranging in size from giants producing thousands of horsepower to midget sizes developing only fractional horsepower. These will include some 550,000 washing machines, 300,000 electric refrigerators, 400,000 clocks, 100,000 furnace blowers and 167,000 industrial and 185,000 commercial motors.

Code Numbers Used

Each consumer, it was explained, is given a code number which definitely identifies his location and the transformer now supplying him with 25-cycle power. The names of consumers are next listed by areas and turned over to the contractor (the Canadian Comstock Company) several months in advance of the scheduled conversion date. At this point the contractor's trained personnel contact every consumer and record and check all frequency sensitive equipment. To facilitate ordering and storing before conversion, each motor or part required for changing over consumers' equipment is code marked, Hydro meeting the cost of converting domestic and commercial equipment and part of the cost of the industrial change-over as specified under the regulations.

The pattern set in the north-east section of East York Township indicates that the conversion program, despite the magniture and complexities of the undertaking, will go forward smoothly and with a minimum of inconvenience to consumers.

Well in advance of the cut-over, all consumers affected were notified, a complete inventory of their appliances taken and all frequency sensitive equipment changed over in readiness for zero hour. For the guidance of consumers, instructions were issued by both letter and card. In accordance with a carefully planned schedule, the 25-cycle power in the section of East York affected was cut off at 9 a.m. Between that hour and 11 o'clock, the work of replacing frequency sensitive 25-cycle with 60-cycle equipment in the homes and industries affected proceeded smoothly and efficiently and without any suggestion of "fluster." In fact, the calm, seemingly unhurried and methodical way in which the job was done was an outstanding feature of this initial conversion to 60-cycle.

Attention To Detail

At the same time, one could not but be impressed by the attention to little details which are so vitally important in an undertaking of this character. For example, there was the smart, efficient appearance of the Comstock Company's

technicians who were attired in immaculately white coveralls as they went about their job. There was the trim, smart appearance of the trucks on which converted equipment was transported to the various homes. And speaking about the trucks, Hydro News observed two particularly interesting features. First, the rear of these trucks is equipped with a specially-designed platform on which equipment is placed and lowered to the ground level or from ground level to truck platform level. The advantage of this platform is obvious, when equipment such as a refrigerator is being moved.

The other feature of special interest is the attention given to the protection of all equipment. In addition to thick, heavy blankets used to cover equipment in transit, there is protective padding at points where appliances or equipment might be damaged.

Interest And Cordiality

As these specially-designed mobile units, manned by trained crews, moved from house to house, one could readily observe the interest and cordiality of the consumers themselves as they watched how the new 60-cycle equipment was installed with clocklike precision.

In a number of cases, consumers had received refrigerators on loan pending the change-over of the motors on their own equipment. As soon as the 25-cycle power was cut off, the mobile crews removed all equipment which had been in temporary use. By the time the power came on again, two hours later—at 60-cycle—consumers found all their own equipment and appliances, changed over for 60-cycle operation, and in place ready to operate.

While many consumers expressed amazement at the speed and efficiency of the entire operation, they would have been even more amazed if they could have seen the area office of the Canadian Comstock Company, located in a section of the far-flung grounds formerly operated by GECO during the war years. In that office, there is a place for everything and everything in its place—down to the last nut and bolt.

Coded And Itemized

In one of the Comstock buildings, the 60-cycle equipment purchased for use in changing over 25-cycle equipment is numbered, coded and itemized, while the name and address of the consumer concerned are listed in each case.

It is also of more than passing interest to note the many different makes of electrical applicances and equipment brought in for conversion. In some instances, technicians find themselves working on very old and outmoded appliances—from an appearance standpoint. From a practical standpoint, however, many of these appliances appear to be still capable of rendering very efficient service.

To come back to the actual change-over event, it was a proud day for Reeve John Warren of East York, who has been untiring in his efforts to hasten the day when 60-cycle would be available in his area to stimulate industrial expansion.

It was also a proud day for Albert G. Jennings, the chairman of the East York Hydro-Electric Commission.

In fact all members of the local commission and council were beaming as brightly as the dazzling sun when Hydro Chairman "Bob" Saunders switched on the 60-cycle power.

Among those in attendance, in addition to Chairman Robert H. Saunders, Reeve John Warren and Albert Jennings, were R. L. Hearn, General Manager and Chief Engineer, H.E.P.C., A. W. Manby, Assistant General Manager — Administration, H.E.P.C.; H. H. Leeming, Director of Frequency Conversion; M. J. McHenry, Director, Consumer Service Division, H.E.P.C.; W. R. Harmer, Consumer Service Engineer, Frequency Conversion Division, H.E.P.C.; J. A. Blay, Manager of Promotion, H.E.P.C.; and others.

Classified Ads

ARTICLES FOR SALE

OUTDOOR TYPE transformer (C.G.E.), Serial No. 187494, Type, H.T., Cycles-25, K.V.A. - 75, Form - HY, H.V. - 13200, L.V. - 575, Oil - 104 Galls, Weight - 3300 lb., H.V. Connections - 13200 - 12540 - 11880, 3 Phase. In service only three or four months. Direct inquiries to Timken Roller Bearing Company, St. Thomas, Ontario.

QUANTITIES OF series street lighting 1-¼" galvanized iron pipe brackets, simple X-arms, series brackets, series heads, 20' radio wave reflectors, some centered suspension units with accessories, and 7.5 amp series regulators. Apply Niagara Falls Hydro-Electric Commission.

RESCUES NEIGHBOUR



MAYOR E. C. SARGENT of Owen Sound smashed his way into a burning house recently to rescue Clarence Paull who was trapped in a blazing story-and-a half building.

Mr. Sargent ran to the Paull home from his own house nearby, climbed into a wood shed and broke a window with a log. He dragged Mr. Paull from the building and aided firemen in their attemps to quell the blaze.

Mayor Sargent, who is also a commissioner of the Owen Sound Public Utilities Commission, gave credit to firemen for their efforts in searching the smoke-filled building. Mr. Paull was not seriously burned.

Setting the Pattern

FOLLOWING the first cut-over to 60-cycle power in East York on May 18, two further cut-overs were made on May 25 and June 1.

This means that a total of 194 consumers, made up of 172 domestic, 4 industrial and 18 commercial, are now enjoying the benefits of 60-cycle frequency in East York.

It is expected that commencing about the middle of July in the same area, there will be a series of weekly cut-overs with between 60 and 75 domestic consumers receiving 60-cycle service on each occasion at the outset with the number being increased progressively to 100, 150 and 200 daily.

General conditions in this north-east section of East York, it is pointed out, have made it a logical area in which to stage "dress rehearsals" of the pattern which will be adopted in carrying out the frequency conversion program.

In October of this year, "big scale" conversion operations will be launched in Scarboro and completed by the end of the year.

When the pattern has been established and the conversion program really gets rolling, it is expected that approximately 200 consumers will be changed over from 25- to 60-cycle frequency every day.



SKY-SCRAPER CHIMNEYS at Copper Cliff. The tallest of the three towers to a height of 510 feet, with an inside diameter of 45 feet at the top.



WHERE HYDRO power comes in to the Falconbridge Mine. The voltage is stepped down by the transformers in the background. On the right is the main shafthouse.

by
Harry M. Blake
Hydro News

FROM EARTH'S FIERY CORE

AGES ago, so geologists tell us, eruptions of molten material from the earth's fiery core, accompanied by twisting and tilting of the sedimentary surface rocks, formed the famous Sudbury Basin where most of the world's nickel, substantial quantities of copper and many other important metals are mined today.

From a production point of view, the name given this rich ore-bearing area is rather a misnomer, since it is only along the ridge encompassing the basin that mining operations are carried on. The ore-bearing ridge forms a belt some 85 miles in extent with an average width of perhaps three miles. Within these limits is a store of mineral wealth both near the surface and at accessible depths which, it is believed, will not be exhausted for years to come.

Early Developments

Discoveries of rich ore bodies at Sudbury were made in 1883 during the building of the transcontinental line of the Canadian Pacific Railway. In those days mining men were looking for copper rather than for nickel, which, with the facilities available, had proved difficult to treat. Copper made quite a dazzling showing in the ore-bearing rocks of the Sudbury ridge, and an enterprise known as the Canadian Copper Company was organized to develop claims. It was soon discovered that nickel was so closely associated with copper in the norite and granite extrusions that, unless efficient methods of separation were discovered, it would be impossible to market the ore. The problem was resolutely faced and solved. And now that nickel could be readily divorced from its ore companions, its value to the steel and other metallurgical industries became immediately apparent. In 1887 the entire world had produced little more than 2,000 tons of nickel. By 1902 Canadian production was more than 5,000 tons. In that year the Canadian Copper Company at Copper Cliff and the Orford Copper Company in New Jersey, which had worked out a successful separation process for copper and nickel, joined hands as the International Nickel Company.

Nickel In The World Wars

By 1914 Canadian production of nickel had reached 23,750 tons a year and was pushed to new peaks during the First World War. In 1918 the company's electrolytic refinery at Port Colborne, Ontario, was completed and facilities for producing nickel from ore to finished product in Canada made available. In 1929 a merger was effected with the Mond Nickel Company, a British enterprise which was also carrying on operations in the Sudbury District, and The International Nickel Company of Canada, Limited, came into being.

During the Second World War, Inco, as the company is familiarly known, produced for the use of the allied countries approximately 1,500,000,000 pounds of nickel in all forms and about 1,750,000,000 pounds of refined copper. In addition, it supplied large quantities of platinum metals. The bulk of this tremendous output went into armament, but removal of controls after V-J Day made production again available for peacetime industrial uses. This very high production capacity is, of course, fundamentally dependent upon the use of electric power in nearly all spheres of activity. A recent visit of Hydro News to the Sudbury area was revealing as to the uses to which electricity is put both by International Nickel and the Falconbridge Nickel Mines Limited, which is engaged in mining operations on the easterly section of the ridge.

At Copper Cliff, the headquarters of the International Nickel Company, we learned that International Nickel now owns 100,000 acres of mineral land and operates five underground mines, including the Frood-Stobie, as well as two open pits. Workings reach their greatest depth at the Creighton mines where they have been carried to 5,563 feet below ground. It was explained that the mines, together with the concentrator and smelter plants, constitute a single integrated operation laid out to develop, mine and produce a constant supply of nickel geared to the market demand.

Power From Hydro's "Abitibi"

International Nickel was the first customer of Hydro's Abitibi Canyon plant. A double circuit steel tower transmission line carries the power from Abitibi over a distance of approximately 250 miles to the company's substation at Copper Cliff. This is 25-cycle power and is used chiefly in the smelter and copper refinery.

Hydro also furnishes some 60-cycle power from its Sudbury area generating stations. The present load, approximating 2,750 horsepower, is transmitted to the company's substation at Coniston. With the completion of its Tunnel Site development on the Mississagi River early next year and the facilities afforded by the frequency changer station now under construction near Sudbury, Hydro will

(Continued on page 12)

IN THE open pit at Frood, drilling rigs on the benches are pounding nine-inch blasting holes. The trucks are proceeding to a spot where electric shovels are working.



DRILLING AT the 1,200-foot level in the Garson mine.



Ore cars about to load from a drift at Falconbridge.



CASTING REFINED copper shapes. Each electric furnace is served by a casting wheel.



REMOVING VERTICAL cast wire bars from the pointing machine in the copper refinery at Copper Cliff.

SKIMMING SLAG from one of the anode furnaces at the nickel refinery in Port Colborne.



FIERY CORE

(Continued from page 9)

be able to augment both its 25-cycle and 60-cycle services should the need arise. The Huronian Company, a subsidiary of Inco, furnishes some of the company's power requirements from plants on the Spanish and Vermilion Rivers, and the remainder is derived from steam generation at the company's copper refinery. An ingenious telemeter system has been developed to ensure that correct proportions of Hydro and Huronian power are supplied to the company's distribution system.

This distribution system of Inco is a vast and complicated network. The 25-cycle power is handled through no less than 10 substations, while the 60-cycle power is distributed through 6 transformer banks. At both mines and reduction works, overhead radial feeders bring the power from the substations to control rooms where the starting equipment for the motors is grouped. Protection is provided by instantaneous over-current and ground relays which limit the damage to equipment resulting from short-circuits or grounds.

The part that electricity plays in this great industry is strikingly revealed by the number of motors in use. Including stand-by machines, there are approximately 700 electric motors in the mines, close to 5,500 in the reduction plants at Copper Cliff and Coniston and some 650 in the copper refinery. Motors of 75 horsepower or over are, in general, supplied at 2,200 volts, and smaller motors, down to about one-half horsepower, at 550 volts. The very smallest motors are 110-volt single phase machines.

Open Pit Mining

Hydro News paid a visit to one of the open pits of the great Frood-Stobie mine. This surface working is being cut down into the rock in steps or benches. The pit becomes narrower as it becomes deeper, the sides being sloped as a safety precaution, and is now 317 feet deep. The presence of a shafthouse, 165 feet high, told us that mining was being carriod out underground as well as on the surface. We learned that beneath us lay a body of ore about a mile in length and in places over 600 feet in width, slanting downward to a depth of 4,000 feet or more. This underground treasure of nickel and copper was being mined **upwards** from the 3,800 foot level.

On the surface, drilling rigs were pounding nine-inch blasting holes 60 feet down into the ore. Once a day, usually at noon, the charges are fired and 12,000 tons of ore and rock are shattered in a single blast. We watched the electric shovels at work cleaning up after the previous day's blasting. Power for these machines is supplied through trailing cables attached to connection boxes tied in to the overhead power line which runs completely around the rim of the pit. The shovels use power at 2,200 volts. As an additional protection to that given by the heavy insulation of the cables, a ground relay system is employed. This safeguards against the hazard to life from the possibility of the 2,200-volt conductors coming into contact with the frames of the shovels or lying exposed on the ground.

Crushing And Smelting

After the ore is mined it is crushed and ground to break the particles of rock away from the mineral sulphides. At Copper Cliff this operation is carried out in a building twice the size of the Maple Leaf hockey arena in Toronto. Here electrically-driven giant cone crushers and rolls reduce the ore to one-quarter inch or less. Mixed with water, the ore is now handled by a battery of 34 grinding mills which crunch it down to the consistency of fine sand.

The rock particles can now be removed and the nickel separated from the copper. First of all, in long rows of tanks, the mineral particles are floated off by a specialized process while the valueless rock settles at the bottom. After further flotation and filtering, two products emerge, one mostly copper and the other mostly nickel.

Separation Processes

The ore concentrates now pass to the huge smelting plant where they are roasted in hearth furnaces to get rid of most of the sulphur. Melting in reverberatory furnaces follows and the impurities are skimmed off as slag. In the molten state the metal is now conveyed in huge ladles and poured into convert-



SPECTACULAR BLASTING features operations in the open pit of the great Frood-Stobie mine near Copper Cliff. Twelve thousand tons of rock and ore are shattered in a single blast.



COME FIRE, cave-in or other misadventure — and every precaution is taken against accidents —these men can really relax over their lunch. They are in one of the safety refuges provided at the Falconbridge Nickel Mines and furnished with an independent ventilating and drinking-water system.



ON ITS way with ore to the hoisting skip — one of the many trains with electric trolley locomotives operating in the Frood-Stobie mine. Note the heavy protective timbering in the gangway or gallery. Safety is the first thought in modern mining operations.



A TRAIN of ore at the upper smelter yards of the International Nickel Company at Copper Cliff. Canada supplies nearly 90 percent of the world's nickel, and the company's sidings are as busy as the tracks at a railway divisional point.

ers. This gets rid of the iron and more sulphur is eliminated. The resultant matter is then separated into nickel and copper. The copper is transferred in the molten state to the company's nearby copper refinery, while the nickel sulphide is shipped to the nickel refinery at Port Colborne.

Hydro At Port Colborne

Prior to 1918, the company's nickel refining operations were carried on exclusively at its plant at Bayonne in New Jersey. When cheap and adequate power became available from Hydro's plants at Niagara, the Bayonne refinery was closed down and all nickel refining operations concentrated at Port Colborne. Nickel was one of the most important metals used in the last world war and its supply to the Allies in unprecedented quantities may be said to be in no small measure due to the steady and uninterupted power services given by the Commission to the Port Colborne plant during the six long years of conflict.

Nickel Refining Processes

Grown to 12 times it original size, the Port Colborne refinery now occupies twelve acres of ground. Here the nickel sulphide from the Copper Cliff smelter is sintered and then melted in oil-fired furnaces and poured into moulds. The resulting 425-pound slabs of metal go to the electrolytic refinery as anodes.

The refinery proper is filled with row upon row of concrete tanks. The anodes, consisting of impure nickel and containing a small percentage of platinum metals, are lowered into a nickel sulphate solution in the tanks. The impure nickel anodes are slowly eaten away by the electrolytic process and the nickel is deposited as cathodes. These cathodes which are 99.95 percent pure nickel, including a fraction of a percent of cobalt, are removed from the tanks and cut into the sizes required by the various users of electrolytic nickel. The residue from the tanks contains the platinum and other precious metals. This is concentrated to remove a large part of the impurities, and the concentrate goes to the company's platinum metals refinery in Acton, a suburb of London, England. From it are obtained platinum, gold, silver, palladium, rhodium, ruthenium and iridium. This refinery supplies a major percentage of the world consumption of platinum metals.

Edison Was There

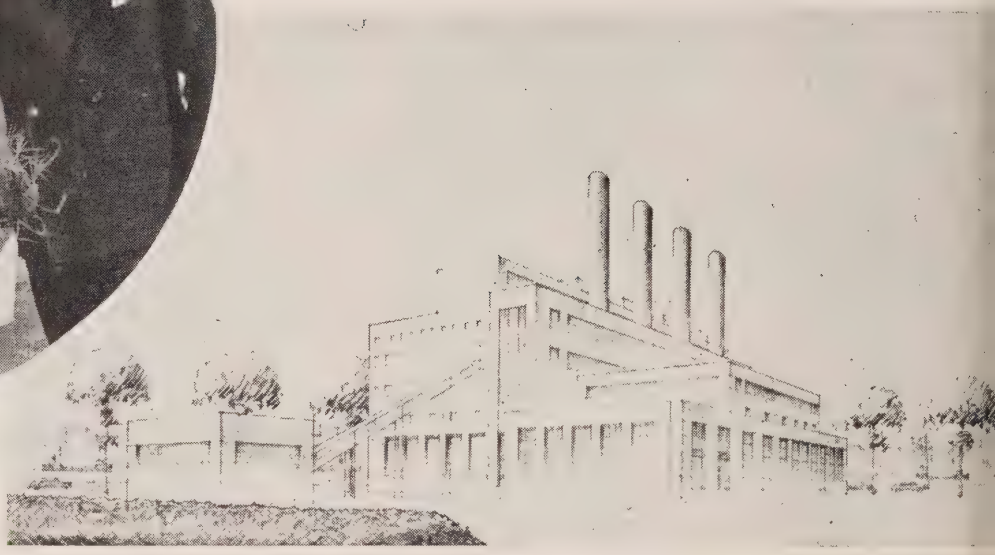
Eleven miles north of Sudbury is located the property of Falconbridge Nickel Mines Limited. This is a younger and smaller enterprise than International Nickel, but it has already made substantial contributions to the nickel and copper output of the district. Some idea of its growth and of the development of its plant facilities may be gathered from

Continued on page 34)

Premier Turns First Sod

Hon. Leslie M. Frost Inaugurates Construction At Hydro's Windsor Steam Generation Station





PREMIER LESLIE M. Frost holds up first sod turned at Hydro's Windsor steam generating station for inspection of Commission Chairman Robert H. Saunders. Architect's drawing of new station on the right.

DESCRIBING it as the "commencement of a very great development," Hon. Leslie M. Frost—in one of his first official acts as Premier of Ontario—recently turned the first sod at the site of Hydro's new steam generating station on the Detroit River near Windsor.

Although preliminary work has been in progress for several months, the ceremony marked the start of actual construction at the 90-acre site. Focal point of the "sod-turning" was a flag-draped platform at the end of a new access road which was still in the process of construction.

Progress Noted

At other points on Hydro's newly-acquired property, there was ample evidence that the early stages of the Commission's first steam-generation project were well advanced. First carloads of piles—to be used in constructing the docks necessary for coal deliveries to the new plant—had arrived. They were brought in over a special railway spur, built to the site to facilitate transportation of materials and equipment. Then, too, engineering and contractors' offices as well as temporary buildings to house tools, workers' supplies and other materials were being erected as a prelude to the building of the station itself.

Arrival of the official party, including Premier Frost and Hydro Chairman Robert H. Saunders, headed by a Windsor police escort, was heralded by the blowing of a siren which caused a momentary lull in all activities.

Accompanying the two chief participants in the event were Hon. George H. Challies, First Vice-Chairman; W. Ross Strike, Second Vice-Chairman; Richard L. Hearn, General Manager and Chief Engineer; Dr. Otto Holden, Assistant General Manager—Engineering and E. B. Easson, Secretary.

Others in attendance at the ceremony included Hon. Welland S. Gemmell, who succeeded Premier Frost as Minister of Mines; H. C. Rickaby, Deputy Minister of Mines; Hon. William Griesinger, Minister of Planning and Development; Hon. the Rev. M. C. Davies; S. E. Dinsmore, President of Dinsmore-McIntire Limited, general contractors on the project; Controller Clarence DeFields, Windsor; Hugh A. Graybiel, Windsor; Warren P. Bolton, Chairman, Windsor Public Utilities Commission; J. Clark Keith, General Manager of Windsor P.U.C. and President of the A.M.E.U.; George F. Hutcheson, Huntsville, President of the O.M.E.A.; Don F. Brown, M.P., Essex West; Archdeacon H. P. Westgate, D.D.; William Murdoch, M.P.P., Essex South; A. E. K. Bunnell, Department of Planning and Development; George Parry, M.P.P., West Kent, and Controller Gordon B. Ellis, M.P.P., Essex North.

Introduced by Mr. Saunders, Premier Frost termed construction of steam generating stations an "innovation" which would have a stabilizing influence on Ontario's future power supplies.

"The necessity for construction of steam generating stations to supplement water-generated power supplies indicates a tremendous growth in power needs throughout this banner province of Canada," Mr. Frost declared.

Pointing to the era of prosperity which Ontario is experiencing at present, the Premier stated that Windsor, with its new homes and ordered civic planning, represented "a typical cross-section of the province."

He predicted that Ontario would keep pace with the growth throughout the Dominion of Canada, and Windsor, as a great industrial centre was bound to share in this expansion. In this connection, Premier Frost took the opportunity to praise the Commission for its full-scale construction program "which is designed to augment Ontario's power resources by an additional 1,500,000 horsepower within the next few years."

Envisioning "great days and challenging times ahead," Ontario's new Premier declared that the ceremony at Windsor marked "a day of destiny."

Mr. Saunders also spoke briefly and referred to a recent announcement that the general contract for the station had been awarded to the Windsor firm of Dinsmore-McIntire Limited. The con-

tract involves an expenditure of approximately $7,000,000, he pointed out. Output of the Windsor station, which will have an initial capacity of 120,000 kilowatts (160,000 h.p.) and an ultimate capacity of twice that figure, will be available for use throughout the Southern Ontario System, along with power developed at existing and new hydro-electric stations.

"We hope that we will not have to go too far in building other steam generating stations," Mr. Saunders stated, "because the cost of steam-generated power is about three times that of water-generated power."

More Hydro Developments

Hydro, he said, was planning to develop additional power at its Queenston plant by making further use of the waters of the Niagara River under an international agreement while it was also the hope of the Commission that power development on the St. Lawrence River would be undertaken at an early date. "This development would augment Ontario's power resources by another 1,100,000 horsepower," Mr. Saunders stated.

"However, if it is not possible to proceed with these developments within the next few months, Hydro will have to consider construction of new steam stations in addition to the Windsor and Toronto projects," he added.

Concluding his address, Mr. Saunders conducted the party to the foot of the dais where he presented Premier Frost with the ceremonial silver spade. Mr. Frost's expert handling of this shining piece of equipment won the acclaim of a large group of spectators, including many Windsor citizens and juvenile spectators who evidenced vital interest in the project. Their applause was mingled with that of workmen who had taken time off to see the Premier hoist the first shovelful of Essex County soil while a battery of cameras recorded the event for posterity.

And so construction at this important site was officially inaugurated! Before spectators and members of the official party had moved away from the scene, workmen were back at the job of building Hydro's first large steam station which is scheduled for completion by the fall of 1951 as part of the Commission's expansion program to provide adequate supplies of power for the future.

Hydro Expansion Paces Progress In Rural Areas

ONE of the first farmers between Bowmanville and Blackstock to install electricity in both house and barns was Francis W. Werry of Enniskillen. That was in the year 1930.

Attention is directed to this fact by The Canadian Statesman of Bownmanville, a newspaper which occupies a pre-eminent place in the Canadian weekly field and whose editor-in-chief, George James, is widely known in and beyond newspaper circles.

The Statesman reports that every room in Mr. Werry's house and every compartment of the stables and barns were fully equipped with Hydro. Today, Mr. Werry, who is engaged in the electrical business as well as managing his extensive farm is to the forefront in the use of modern farm equipment.

The Statesman goes on to say: "While tracing the progress of farmers such as Mr. Werry, it is also possible to follow the development of Hydro in this province during the last two decades. In 1930, Mr. Werry used 800 kilowatt-hours per year at an approximate cost of $100. In 1948, he used 10,000 kilowatt-hours and his Hydro bill was still only $100.

"When the Hydro was first installed there was a $5.00 service charge per month which has since been abolished."

ST. LAWRENCE PROJECT

Heading the Great Lakes-St. Lawrence Association as board chairman is Julius H. Barnes, former president of the United States Chamber of Commerce. The Association was formed to promote construction of the St. Lawrence Seaway project, according to a bulletin issued by the United States Federal Power Commission.



PREMIER FROST is shown addressing the assembly prior to turning the first sod, which officially inaugurated construction.

FUTURE CITIZENS of Windsor district displayed keen inter in "sod-turning" ceremony. First sod turned by Prem Frost (extreme right) receives scrutiny of three juvenile sp tators with Richard L. Hearn, General Manager and Ch Engineer, and Dr. Otto Holden, Assistant General Manager Engineering, who also attended the ceremony.

NEWCASTLE SEES QUEENSTON



HERE'S A "LINE-UP" of players and officials of the famous Newcastle United Football Club outside the main entrance to Hydro's Queenston-Chippawa plant. Included in the group also are Canadian soccer officials, newsmen and Hydro personnel. The British soccer players got a real "kick" out of the visit, and agreed that Hydro had demonstrated some of the finest teamwork witnessed during their Canadian tour.

THE thunder of Niagara's cataracts, accompanied by claps of thunder from the heavens, provided a roaring welcome for members of the Newcastle United Club, internationally famous British soccer team, as they gazed upon the seventh wonder of the world for the first time. Indeed, it seemed that the elements were combining with the falls to boom out a greeting in spectacular style and to put on a dynamic display of pyrotechnics for the visit of these noted British athletes.

During their stay in Toronto where they played the Ontario All Stars (winning 8-2) the members of the team took time to visit Hydro's Queenston-Chippawa development and other important points in the Niagara area. The party consisted of 16 players, their manager, George S. Martin, the trainer, Norman Smith, four directors of the team, Bill Entwhistle of the Ontario Athletic Commission, Sam Davidson, tour manager, and other prominent soccer officials including Alex McGregor and Major Steele, as well as newsmen.

At Welland Ship Canal

From the outset it was apparent that the trip was going to be a great success. As the bus, transporting the party, approached the Welland Ship Canal at Homer near St. Catharines, two freighters en route from Lake Ontario to Lake Erie were conveniently in position ready to be locked through and lifted up the first step of the water passage in climbing the steep Niagara escarpment. The speed and ease with which this operation was completed drew many comments from the visitors.

Proceeding to historic Queenston Heights, where one of the important battles of the War of 1812-14 was fought, the party had luncheon in the Niagara Parks' Queenston restaurant. This charming stone building with its delightful, cosy atmosphere is situated at the edge of the heights, and an unobstructed view of the beautiful lower Niagara River winding its way to Lake Ontario is obtained from the windows and the verandah of the restaurant.

After luncheon, the party proceeded to Hydro's giant Queenston generating station for a tour through this impressive power plant. The visitors were greeted in the modern reception hall of the plant's screen house by attractive young ladies in neat uniforms. Before making the tour of the plant the visitors were shown the Hydro technicolour movie entitled "Niagara the Powerful."

Young ladies acted as guides through the plant, explaining the many technical features of the generating station with an ease and clarity that was impressive. Indeed, it was apparent that "something

(Continued on page 30)

by

C. G. W. MacIntosh
Hydro News

CHENAUX



PUMPING OPERATIONS remove 2 gallons of water a minute from the dam site. At top is the upper coffe at bottom will be the tailrace ch

WORK PROCEEDING ON SCHEDULE AT SITE OF NEW DEVELOPMENT ON OTTAWA RIVER—EXPECTED TO BE IN SERVICE BY JANUARY, 1951

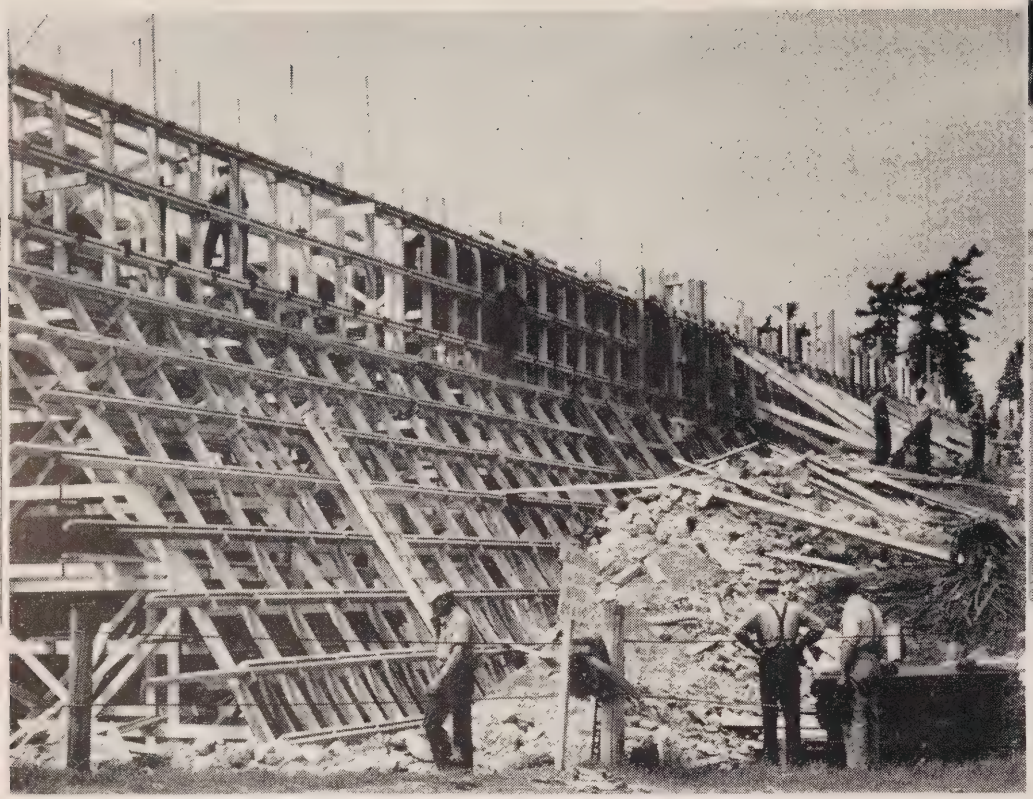
by
Edith B. Kent
Hydro News

AMID the rolling, tree-clad Laurentians, another of Hydro's major post-war developments is rapidly taking shape. With the date of initial operation set for January 1, 1951, construction work on the Chenaux power-generating station on the Ottawa River, eight miles north of Renfrew, is proceeding according to schedule.

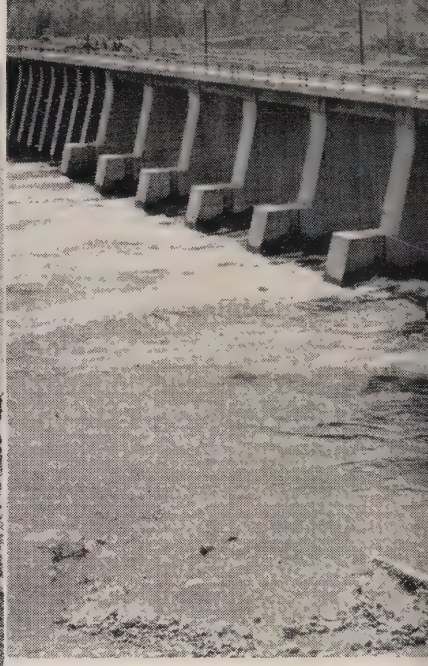
The first three of Chenaux's eight 20,000-horsepower turbine generators are expected to be in service at the beginning of 1951, and it is estimated that the rest will be placed in operation at succeeding two-month intervals. Ultimate capacity of the plant will be 119,000 kilowatts (160,000 hp). Operating head will be 40 feet.

Construction work at this $25,000,000 project is being carried on in three main sections. On the Quebec side of the river, a dam 1,400 feet long will be erected beside the village of Portage du Fort. In midchannel, on Limerick Island, a 1,100 foot control dam is being built and a discharge channel 310 feet wide and 1,500 feet long has been excavated through the island. A continuation of the Limerick Island dam will be constructed across the interprovincial channel — this will incorporate the main dam and power house.

At the time of Hydro News' visit to the site, in mid-May, both upper and lower cofferdams at the main dam site had been completed, and 20,000 gallons of water a minute were being pumped out of the area between the two. It was estimated that by the middle of June the site would be dry enough to start excava-



WOODEN FORMWORK under construction for the Portage du Fort dam, designed as flood protection for the Quebec village. Concrete will be poured inside steel-pile lining.



CONCRETE POURING is 80 per c remaining to be poured. Upper

MAIN DAM construction is getting under way beside upper cofferdam (below). At top right of photo is shown Limerick Island control dam, now being used for diversion.



tion for the dam, for which a s portion of the formwork had alr been erected. About 60,000 cubic y of earth and rock will be excavated the powerhouse and dam, which wil 1,400 feet long, 500 feet of which wil incorporated in the headworks and in the bulkhead section.

The cofferdam at the Limerick Isl site had been removed and water rushing through the concrete sluicew and down the discharge channel. estimated 34,000 cubic yards of concr of a total of 43,000, were already in pl with only the rollways remaining to poured. This will be completed s time in 1950.

A total of 223,000 cubic yards of r and 150,000 cubic yards of earth excavated for the discharge channel. the former, over 200,000 tons were cr ed for concrete, while the remaining r unsuitable for crushing, was used cofferdam fill. The rock crusher, pr ously located on Limerick Island, now been dismantled and removed.

Though water was still flowing thro a small opening in the middle of upstream Portage du Fort cofferdam was expected that within a few weeks headpond level would be sufficiently for closure. Construction of the do stream dyke at this site had been beg and was progressing favourably, as the erection of formwork for the d About 1,100 of an estimated total 30,000 cubic yards of concrete had b poured.

Before extensive work can be done this dam, it will be necessary to rer the road to run across the upper co



...rick Island dam, with only rollways ...om site can be seen in background.



OVERALL VIEW of the site of the main dam and powerhouse, now being drained f... excavation. At top centre is the concrete mixing plant; at left, the pumping sta...

dam and tear down a bridge over which the existing road now passes. Upon completion of the dam, the road will again be rerouted, this time across the top of the dam itself, as has already been done in the case of the Limerick Island dam. At the main dam site, on the other hand, the road will continue to pass over the interprovincial bridge some 1,000 yards downstream from the powerhouse.

No extensive changes will be necessary on the railway line, though one railway bridge will have to be raised a matter of some five feet.

An idea of the size of the job may be formed from the estimate of the amount of concrete required. Total for the whole project is estimated at 215,000 cubic yards, with a breakdown as follows: main dam, 35,000; powerhouse, 97,000; Limerick Island dam, 43,000; Portage du Fort dam, 30,000. In addition, a smaller amount of concrete will be used for a side dam, north of the village, and for the switchyard, which was being excavated at the time of the writer's visit. A total of 0,000 cubic yards of earth and rock are to be removed from this site.

Facilitating preparation of the concrete is the huge mixing plant set up on the Ontario shore overlooking the main dam site. Housing two 2-yard mixers, it churns out, at a maximum rate of 120 cubic yards an hour, aggregate conveyed via Bailey bridge structure from nearby bins. Sand is obtained from a pit a few miles from the site, and crushed rock from piles nearer at hand. Pumpcrete machines were used for the Limerick Island dam, and this method will also be adopted for the main dam, while concrete for the Portage

(Continued on page 30)

CONCRETE MIXING operations are carried on in mixing plant at right of photo bel... Aggregate is screened at left, then carried up conveyor belt on Bailey Bridge ra...



Auxiliary Steam Plants To Augment Power Supply

May Get Through Next Winter Without Cutoffs, A. W. Manby Tells District No. 5 O.M.E.A.

by
Grace J. Carter
News Editor

PRESENT indications point to an improvement in the power supply situation next winter when it is anticipated that consumers will experience a minimum of inconvenience.

Observations along this line were made by Commission personnel who attended the District No. 5 Ontario Municipal Electric Association meeting at St. Catharines on May 18.

When questioned on this subject, A. W. Manby, Assistant General Manager — Administration, said that the Commission was augmenting its power resources by the installation of auxiliary steam plants which would provide approximately 70,000 kilowatts. He believed that with certain restrictions and, probably, allocation of available power supplied to the municipalities, they would get through the coming winter without any cutoffs.

Mr. Manby spoke briefly on the lifting of restrictions of interior store lighting which became effective on May 16. He pointed out that the Commission would have liked to remove all restrictions but believed that the remaining restrictions on lighting in show windows, advertising signs, parking lots, service stations and theatre marquees (between the hours of 7 a.m. to 6 p.m. Monday to Friday inclusive) would not impose any serious hardship on anyone.

Servicing Equipment

He also pointed out that the Hydro was taking the opportunity at this time to service its generating and other equipment. This servicing period, he said, had been delayed in order to maintain maximum power output during the season of the year when power demands were at their highest level. It was important, Mr. Manby stated, that all equipment be in the best possible shape in order to insure good operating conditions and a maximum power output during the coming fall and winter months.

Mr. Manby stressed the need for continued voluntary conservation on the part of all classes of consumers as, during the past two weeks, he said, certain Hydro plants, such as Chats Falls, could not meet peak demands because of high river flow. As a result, he stated, it had been necessary to cut some of the firm and at-will customers. The total cuts amounted to something like 180,000 kilowatts a day, he said.

A subject discussed at some length during the afternoon question and answer period was whether the O.M.E.A. should appoint an engineer as a full-time manager-secretary of the Association. It was the general consensus of opinion that the members of the Association were well satisfied with the services of their own municipal engineers as well as the Hydro engineers and, therefore, they did not think the expense of hiring an engineer would be warranted. In any case it was pointed out that what they wanted primarily was someone to interpret the H.E.P.C. regulations to the laymen. Many of the delegates expressed the belief that the Association did need an efficient full-time secretary to handle the O.M.E.A. affairs. The matter was left up to Roy Pierson, Chairman of District No. 5, to do as he saw fit when he reported to the Executive Committee.

Another point brought up at the afternoon session was whether the Association should have the privilege of appointing a member to the Hydro Commission. The delegates thought they should be able to make this appointment and agreed to send a recommendation to the Executive Committee to be brought up at the next winter convention.

Placards On Poles A Hazard

Placards posted on poles were considered a hazard to linemen and it was pointed out that the municipalities had a legal right to do something about this matter. It was explained that this applied to all placards or posters with the exception of voters' lists.

A resolution was passed during the business session that the next meeting of District No. 5 would be held at Delhi sometime in October.

"We Take Ourselves Too Seriously" was the main theme of a humorous address by Max Ford of Montreal at the evening banquet.

There was an old adage, the speaker said, which went something like this: "Today is the tomorrow you worried about yesterday, and all is well. Conse-

(Continued on page 30)



"WE TAKE ourselves too seriously," was the theme of the address given by Max Ford at the evening banquet. This illustration shows a section of the crowd enjoying one of the many excellent stories.

MAX FORD of Montreal (standing) was the guest speaker at the evening dinner. To the right of him is Ray Pfaff, St. Catharines; and M. J. McHenry, Director of Consumer Service Division, H.E.P.C. On the left of the speaker is A. W. Manby, Assistant General Manager—Administration, H.E.P.C.





IN THIS group we have K. D. Taylor, West Central Region; R. T. Hewitt, Hagersville; D. A. Hill, Waterford; Art Roth and Albert Brooks, Hagersville.



THIS PHOTOGRAPH (l right) would indicate the sessions had been warm. From left to these delegates are: H Howard, Thorold; " Boyier, St. Catharines Reid, Thorold; K. R. B Caledonia; and A. S. bertson, Niagara Reg

LOKS LIKE these gentlene (lower left) are enoyg sparkling repartee. Th are: "Nels" Devana an George Sweatman, St. Caarines; "Bill" Wilson, Guph; and Ray Pfaff of t. atharines standing at the back.

G. C. PARKER (right), West Central Region, has evidently some important matters on his mind as he talks to Dr. G. F. Unger, Brantford Township, and Keith MacLeod, Stamford Township.







June is here—the most popular month for weddings and wedding cakes. We still think that our finest Christmas cake recipe makes the best wedding cake. And in our opinion it should be baked about three weeks before the wedding.

* * *

Our fruit cake ingredients can be spread two inches deep in a four, a six and an eight-inch square pan. This makes 116 square inches of cake. However, the eight-inch layer will yield 100 pieces.

* * *

To follow tradition, the bride, assisted by the groom, makes the first "cut" into the cake. This may be done by cutting down one slice in the second layer if the bottom is a false decorative box. This allows the bottom layer to be cut prior to the ceremony.

* * *

For cutting fruit cake, have ready a sturdy, sharp knife and a tall container of boiling water. Plunge the blade of the knife in the boiling water, dry it and cut the cake, pressing down firmly and evenly. Repeat heating the knife frequently.

* * *

If you are icing the cake yourself set the crumbs with a thick sugar syrup. After you pat on the almond paste, smooth the top surface with rolling pin and trim the edges. Buy commercially-made decorations such as sugar rosebuds or silver dragee. Apply these rosettes quickly while icing is soft as the icing soon forms a crust.

* * *

Sandy greens are one of the world's pet peeves! To avoid sand, at least part of it, cut off root ends, tough stems, and yellowed leaves. Then greens are ready to be washed thoroughly — at least three times in warm water. Be sure to lift the greens out of each water, as the dirt and grit sink to the bottom. A spray may be used too.

* * *

Cook greens covered, with salt, (1 teaspoon per pound) in almost no water—the water that clings to the greens is usually enough—over medium heat, until tender. Spinach takes 10 to 15 minutes. Other greens may take longer. Stir frequently with fork and uncover last 5 or 10 minutes. Drain thoroughly.

* * *

Have you discovered how many different kinds of fruit drinks you may find on the grocery shelf? There are prune, grape, tomato, orange-grapefruit, lemon, pineapple, plus apricot nectar.

* * *

Simmering canned whole kernel corn and string beans in a spicy sauce is a dish that flavours the whole meat.

* * *

Try for something different in canned tomatoes. Shred three or four nasturium leaves and mix into a can of chilled tomatoes to bring out flavour.

* * *

If there's a crack in your wooden salad bowl, patch it with shellac. Get the surface thoroughly clean and dry before you pour shellac in crack, and brush around the entire surface.

* * *

Decalcomanias are as sticky to remove as to pronounce! These glued-on-transfers can be removed without damaging paint if you douse them with hot vinegar. Give the solution a few minutes to soak in, and then gradually rub them off.

* * *

Give us room, lots of room, to prepare for a party. In our kitchenette where we have the kind of ironing board that comes out of the wall, this is put to good use as a serving table. If a piece of linoleum is placed over the board it makes an excellent table for hot dishes.

* * *

Bristles do not always belie their name after soaking in water. Brushes such as whisks, hairbrushes and tooth brushes regain stiffness by soaking them in two teaspoons of alum added to a cup of water.

* * *

Be "flowery" with salads! Just before you serve potato salad, mince colorful nasturtium flowers in strips and sprinkle on the salad.

* * *

Onions can be dangerous! When we slice onions they slip out of the knife's way and leave the fingers there to take the rap . . . It has been suggested that we place the onion on a flat metal grater and chop the vegetable easily.

WEDDING CAKE

4 cups separated seeded raisins.
4 cups seedless, washed raisins.
2½ cups washed currants.
1½ cups cut-up dates.
1½ cups drained, cut red maraschino cherries.
1½ cups slivered citron peel.
1 cup blanched chopped almonds.
1 cup broken pecans.
1½ cups slivered orange and lemon peels.
3½ cups once-sifted pastry flour.
½ tsp. baking powder.
½ tsp. baking soda.
1 tsp. salt.
4 tsps. ground cinnamon.
¾ tsp. grated nutmeg.
¾ tsp. ground ginger.
½ tsp. ground mace.
¼ tsp. ground cloves.
1⅔ cups butter.
2 cups brown sugar.
9 eggs.
⅓ cup molasses.
⅓ cup brandy or grape juice.
¼ cup cold coffee.

Pat the washed fruits dry with a towel.

Measure the flour, baking powder, soda, salt and spices into a sifter and sift together twice. Add the prepared fruits and nuts, a few at a time, to dry ingredients and mix until all are separated and coated with flour mixture. Cream butter and blend in sugar well. Add eggs, one at a time, beating well after each addition. Stir in molasses, grape juice and coffee.

Add the fruit-flour mixture to the creamed mixture gradually, a little at a time . . . mixing after each addition. Divide the batter into three prepared pans spreading well into corners to two inches in depth. Bake in preheated oven of 300 degrees. The four-inch cake requires two hours. Six-inch cake, 2¼ hours, and eight-inch cake, 2¾ hours. Stand cakes in their tins overnight to cool.

Note: Line tins with two thicknesses of aluminum foil. Grease lightly with butter.



by
Edith B. Kent
Hydro News

EXACTLY a century ago this year, a pioneer settler emerged from the swamp and bush into a clearing on the banks of a picturesque river, 11 miles from Durham, Ontario.

He looked at the great forests of maple, beech, and pine, and at the rich soil at his feet, and "saw that it was good." He could visualize a prosperous settlement, and he forthwith proceeded to stake out a claim and build a log shanty large enough to accommodate himself and, temporarily, other prospective settlers.

That was the origin of the town of Hanover.

Today, 100 years later, Hanover is a far cry from Abraham Buck's shanty. Essentially an industrial town, it contains 3,650 persons, and its factories and mills provide work for many more from Neustadt and other neighbouring villages. It is the commercial and recreational centre of the district, and with its fine homes and public buildings and picturesque environs, presents a very pleasing appearance.

As its name suggests, Hanover was settled almost without exception by Germans. The town was originally called Adamstown, after one of the first settlers, but when the Post Office was established in 1856 it was decided to change the name to Hanover, after the birthplace of Christian Hassenjaeger, its second citizen. The names of the present townspeople also reflect the Germanic origin—Knechtel, Boldt, Metzger, Winkler, Rahn, Eckensweiler, to mention only a few.

As is the case with most industrial communities, Hydro has played a vital part in the development of Hanover. Back in 1914 the citizens of the municipality (a town since 1904) voted on the Hydro by-law, but it was not till three years later that the agreement with the H.E.P.C. was signed, contracting for 300 horsepower. Initial load was 261 horsepower, with an average peak during the first year of operation of 278 horsepower. By October of 1918, the peak had jumped to 475.8 horsepower, servicing 436 consumers, and in September, 1948, it reached an all-time high of 2,403.7 horsepower, with 1,162 consumers. Average load at the present time is between 2,000 and 2,400 horsepower, carried over 12 miles of transmission lines, with the aid of one substation.

Until the end of 1918 the electric system was operated by the Town Council, but in December of that year the Hanover Hydro-Electric Commission was established, consisting of the Mayor and two Commissioners. The Chairman of the original Commission, John Frook, is still living. In 1924 the Hydro Commission combined with the Water Works to form the Hanover Public Utilities Commission. Present Commission consists of Edwin Faelker, Chairman; Eric Winkler, Mayor; and William J. Cross, Commissioner.

Ravages Repaired

The visit of Hydro News to Hanover coincided with the advent of the worst windstorm in recent years, so we had the opportunity of observing, first-hand, Hydro efficiency at work. Since four o'clock that morning, the four linesmen had been out fixing lines, testing questionable fuses, and in general repairing the ravages of the storm.

Hard at work with them was the Hanover Superintendent, Herman Denet, known throughout the town as "Herm." Still very shaky, he told us, of his narrow escape from certain death earlier in the morning. In trying to clear away some ice that was blocking the flow of water over the Saugeen dam, he had slipped and fallen off the platform across the dam, bouncing off the edge onto a timber about seven feet below, where he landed on his back with one foot in the water.

Chatting with Herm, we learned that the dam, which had so nearly engulfed him, is the property of the town. Water is sold to the H.E.P.C., which owns a 400-horsepower generating station a little farther down-stream. Part of Hanover's power comes from this station and part from the Southern Ontario System. To augment the 60-cycle supply of the Georgian Bay System, a frequency changer was built just outside the town limits and 25-cycle power brought up from the Niagara District. The first unit of the frequency changer was placed in operation in 1930 and a second in 1940.

We asked Herm if there was anything special that would distinguish the operation of the Hanover Hydro from that of any other town. "Yes," he said, "there is. I believe we are the only municipality in Southern Ontario to use poles treated with a substance called Osmosar. In addition, the poles are treated at ground

(Continued on page 31)

Hydro News Visits Former Pioneer Settlement Now Prominent Furniture Manufacturing Centre







ABOVE IS one of Hanover's fine homes, built of red brick and set in spacious grounds amidst sturdy trees.

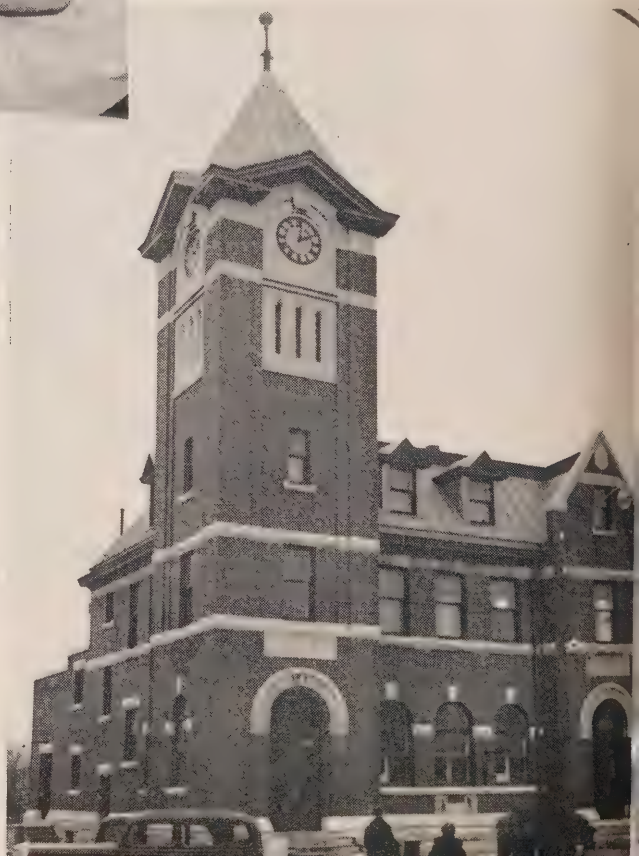
ABOVE LEFT, an almost surrealistic array of leg forms emerges from a Model Hosiery Mills "steamer", a device which gives nylons their full-fashioned shape.

LEFT CENTRE, at the Hanover branch of Swift Canadian Company, women wrappers catch newly-cut pounds of butter as they are pressed out of the printing machine onto a conveyor belt.

BELOW, LEFT, in Knechtel's furniture factory a Hydro-driven overhead conveyor belt, almost half a mile long, supports this cabinet which is being sprayed with sealer.

BELOW is the clock-towered town hall, which houses the Hanover Post Office and Customs Office.







THIS HANDSOME Public Library, above, houses the Hydro Office, the Municipal Offices, and the Council Chambers, as well as providing reading material for Hanover citizens. In front of the building is the Soldiers' Memorial, erected after World War I.

STANDING BESIDE the truck, right, are Herman Denef, Superintendent, second from left, and linesmen Jack Moore, Vern Snider, Valentine Russwurm, and Ed Fink, apparently unaffected by their tussle with storm-ravaged lines earlier in the day.

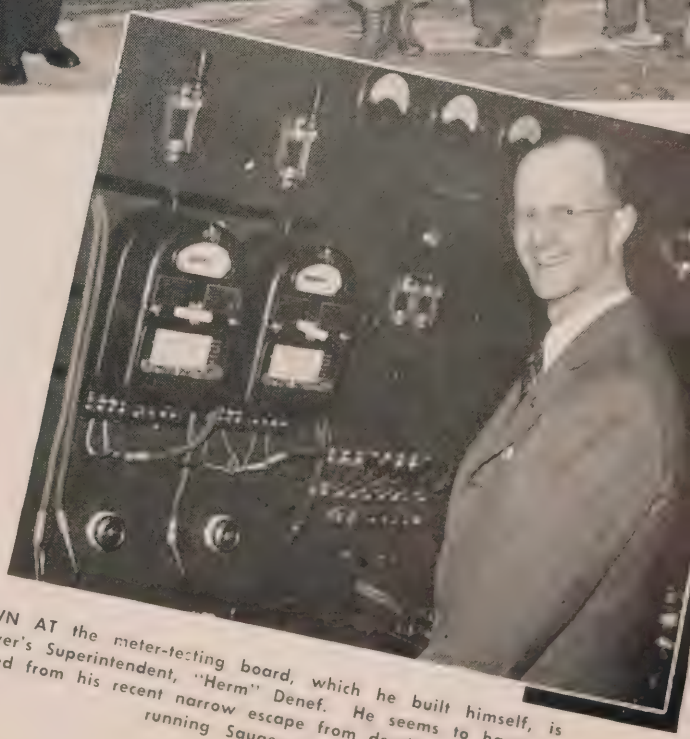
BELOW—CLIMBING the ladder to test fuses was just part of the routine for these linesmen, shown repairing damages done by one of the worst windstorms in recent years.



BELOW—A matter of finance, as Albert Ries pays his Hydro bill to Harry Mann, of the Hanover Public Utilities Commission staff. Harry is also a bright light in the town's Musical Society, and leader of the Hanover Band.







SHOWN AT the meter-testing board, which he built himself, is Hanover's Superintendent, "Herm" Denef. He seems to have recovered from his recent narrow escape from death in the swiftly-running Saugeen River.

AROUND THE HYDRO CIRCUIT



HANOVER'S HERMAN

Herman S. N. Denef, Superintendent and Secretary-Treasurer of the Hanover Public Utilities Commission, has had a lengthy career with Hydro.

Beginning his Hydro duties in 1920 as a linesman, meter reader, and general routine man at Hanover, this native of Brant Township, Bruce County, rose in five years to the position of superintendent. Three years later he was appointed secretary-treasurer, and in 1933 was given the same office in the newly created Georgian Bay Municipal Electric Association. When this became District No. 2 of the O.M.E.A., in 1942, he retained the office, which he still holds.

His maternal grandfather came to Bruce County about 1867 and served the pioneers as a clergyman. "Herm's" position as Sunday School teacher for many years reflects his religious background. He is also a member of the Lutheran Laymen's League.

His recreational activities are many and varied. He is a past president of the Hanover Musical Society and played in its band for about 20 years. He is also a member of the Swing Bowling Club and enjoys the odd game of chess or cribbage.

During his career in Hydro, he spent some time at a School of Electricity in Chicago, from which he holds a diploma in Practical and Theoretical Electricity.

MAYOR OF HANOVER

Probably one of the youngest mayors in Ontario, Eric A. Winkler at 28 is serving his first term as chief magistrate of the town of Hanover.

A veteran of World War II, Mr. Winkler served five years in the wireless section of the air force, attaining the rank of Flying Officer. For three years he was held prisoner of war in Germany, where he did extensive work for the Red Cross, making good use of his bilingual talents.

Back in his native town, he resumed direction of the clothing business which he operates with his brother. In 1947



and 1948 he served as Councillor. His recreational activities include hunting, fishing, singing (he is a member of the choral group of the Hanover Musical Society), and the various projects of the Kinsmen Club.

NEW TRANSFORMERS

Two new transformers, on order for more than a year, were delivered to Strathroy Public Utilities Commission recently, it is reported. Costing approximately $6,000 each, the two transformers and a third, which is still to come, are of a type that can be used for either 25- or 60-cycle power. Although the transformers will be installed as soon as possible, they will not be used until after the frequency change-over unless trouble develops with the present equipment, which has been in service for a number of years.



WILLIAM J. CROSS

Of the five years which William J. Cross has spent on the Hanover Public Utilities Commission, four have been in the office of Chairman. At present he is continuing his efficient service as a Commissioner.

Born in 1888 in Bentinck Township, Grey County, he comes of pioneer stock. Seventy-three years ago his grandfather came to the township from Woodstock, where he had been teaching school, and cleared a farm near Hanover. Since then the Cross family has been active in practically all phases of the town's life. Commissioner Cross himself was a Public School trustee from 1925 to 1943, is a member of the Hanover Masonic Order, and takes an active interest in the Lawn Bowling Club.

Besides these activities, he finds time for his contracting business—electrical, plumbing and heating—and to go on occasional hunting and fishing trips.



WHEN THIS photograph was taken, the well-planned arrangement of trees, shrubs and flower beds on the station grounds at the Queenston power plant was being studied by the Regional Forestry Superintendents. Landscape Engineer, A. H. Sharpe, is seen explaining the layout to L. C. Warner, George Hunter, A. H. Harrington, R. D. L. McCullough, and W. J. Kinnear.

TYPICAL CONFERENCE session is shown here. From left to right, are: George Hunter, Chief Forester's staff; W. J. Kinnear, Eastern Region; L. C. Warner, Niagara Region; Fred Corin, Forest Engineer; R. D. L. McCullough, Northeastern Region; William M. Grundy, Assistant Chief Forester; Alfred F. Potter, Toronto Region, elected conference chairman; Alex M. W. Moffat, West Central Region; W. C. Johnson, Western Region; A. H. Harrington, Northwestern Region; J. C. McClelland, Georgian Bay Region; Fred E. Simpson, East Central Region; and A. H. Sharpe, Landscape Engineer.



Talk about TREES

by

C. G. W. Macintosh
Hydro News

STEPS towards more efficient standardization of Hydro's forestry practices and techniques were taken at an important conference, first of a series, which was held in the Niagara Region during the second week in May.

The gathering officially brought into being the "Conference of Regional Forestry Superintendents." Present plans call for conferences to be held three times a year, in the second weeks of January, May and September.

Regional Forestry Superintendents from Hydro's nine regions were brought together with members of the Chief Forester's staff from Head Office for four days of important deliberations, demonstrations and committee sessions. Members of the Conference literally rolled up their sleeves from the first call to order. They even worked long hours into the night, every evening, ironing out problems that had been referred to committee sessions. In the words of the Chief Forester, W. Ray Hunter, and the Assistant Forester, William M. Grundy, the conference was highly successful and productive of worthwhile results.

The plan for a Conference of Regional Forestry Superintendents was designed to benefit the work of this group who are directing similar operations in widely separated areas. It was felt that this could be achieved through regular, periodic round table discussions of problems common to all; inspections of conditions and operations performed in the different regions; exchanging ideas relative to existing and new forestry practices, and keeping informed on the latest developments in forestry work through lectures and demonstrations of new equipment.

Other objectives sought through these meetings include: promoting a high degree of standardization of trucks, tools, equipment, accounting details, and reports, as well as a high standard of work among forestry sections in the regions; to encourage its members in the establishment of good public relations with the property owners and with Department of Highways, county, township and municipal road officials; to encourage members to promote good forestry practices by enlightening interested persons with whom they come in contact in the course of their day to day operations.

Elect Officers

At the commencement of the sessions in the Niagara Regional Offices in Niagara Falls, the Regional Forestry Superintendents selected the men who will guide and direct the conference meetings for the current year. Alfred F. "Red" Potter, Forestry Superintendent for the Toronto Region, was chosen as Chairman, and other officers elected were L. Carl Warner, Forestry Superintendent for the Niagara Region, Vice-Chairman, and Alex M. W. Moffat, Forestry Superintendent for the West Central Region, as Secretary. Ottawa, in the Eastern Region, was chosen as the locale for the next conference to be held in September.

One of the highlights of the first day's meeting was the presentation of pilot model J120 forestry truck body for inspection. This truck has the first all-steel body of its kind made in Canada. Approximately a year was spent in planning and developing the body. Great interest was evinced by the members in examining the body of the truck on display.

Later in the day, other interesting demonstrations were given. These included methods of laying out new shrub and flower beds, and a showing of the Gandy spreader for lawn fertilizing, and the spray dolly. The spreader is pushed manually and provides even distribution of fertilizer, preventing overlaps which result in burning of grass or turf. This device was developed within the last four or five years.

The spray dolly used in combination with a four-nozzle spray broom for weed control on lawn areas was developed and constructed in Hydro's machine shops at Niagara Falls. The dolly arrangement replaces the usual spray gun application and prevents misses and overlaps, also reducing the amount of drift.

Following the demonstrations, standing committees, each consisting of two forestry superintendents and one member from the Chief Forester's staff or the Landscape Engineer, were appointed.

neer, pointing out the horticultural layout and the systematic arrangement and types of trees on the grounds. Considerable time was spent in discussing the layout features of the grounds, and much interest was shown by the forestry superintendents in the planning of flower and shrub beds.

Numerous topics were dealt with in the conference sessions of the third day. Appointment of substitutes for Forestry Superintendents in case of absence from duty was under discussion. Other subjects considered included training courses at Hydro's Etobicoke Township Training Centre; daily progress of operation; personnel records; survey of trees; condemned tree reports; linemen training; budget for 1950, and survey of rights-of-way.

Preparing the budget for the following year is a new experience and responsibility for Regional Forestry Superintendents. Previously this work had been done by the Head Office staff. Now the forestry superintendents in the regions will be required to estimate the cost of line clearing along rural, low and high tension transmission power lines and high tension telephone lines, it was pointed out. This subject was thoroughly discussed and much valuable guidance was given by the members of the Chief Forester's staff.

Another topic dealt with at considerable length was the survey of the rights-of-way which involves preparing information on a special survey form showing the amount, height, density and species of brush on rights-of-way, also the acres of brush.



Tree Planter

In the afternoon, members of the conference were given a demonstration of a tree planter, made in Hydro's machine shops at Niagara Falls, in operation in the vicinity of Hydro's DeCew plant on the historic Beaverdams grounds. Locale of the demonstration was within a stone's throw of the old stone building once used by Colonel FitzGibbon as his headquarters during the war 1812-14. It was to this place that Laura Secord made her famous trek through dense brush and woodlands from Queenston to warn the British forces of the surprise attack planned by the American troops. The old building, today abandoned and vacant, and its grounds now part of Hydro property were examined with interest by the Forestry Superintendents.

The speed and ease with which trees can be planted by means of the mechanical tree planter brought many favourable comments from the conference members. Forest Engineer Fred Corin gave a comprehensive explanation of the operation of the machine, and answered many questions.

The final day of the conference was devoted to unfinished business and to the reports and recommendations of all standing committees. The Regional Forestry Superintendents voiced enthusiastic comments about the beneficial information and new ideas that they had obtained from the conference, several declaring that it was one of the most educational sessions they had ever attended.

OFFICERS ELECTED at the Conference of Forestry Superintendents are shown left to right, L. Carl Warner, Vice-Chairman Alex M. W. Moffat, Secretary; and standing Alfred F. Potter, Chairman



THIS GROUP studies the seedlings or small trees planted in the trench dug by the tree planter spaced about six feet apart. The photograph shows J. C. McClelland, R. D. L. McCullough, Fred E. Simpson, and W. J. Kinnear. Holding one of the seedlings and discussing the planting is Fred Corin, Hydro's Forest Engineer.



PLEASE NOTE!

IN THE JUNE, 1949,
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HAVE BEEN TRANSPOSED

These consisted of committees on: safety practices; forest management; site maintenance; trucks, tools and supplies; chemical power spraying (insects, weeds and brush); arboriculture (line clearing and tree preservation); accounting details and reports, and personnel matters.

Hold Discussions

On the second day of the conference, many subjects of interest to the forestry superintendents were considered. Topics under discussion were: tools and supplies; power saws (one-man and two-man); repair of broken equipment; hand saws; site maintenance tools; ropes, ½" foresters' "life line"; power sprayer equipment; forestry foreman classification; forestry graduates' and undergraduates' employment and training program; forestry expansion; and forestry instructors at training centre. Most of these matters were referred to committees who deliberated on them, formulated recommendations and reported back to the main conference body with their proposals for adoption.

Some idea of the magnitude of the work for which the Regional Forestry superintendent must assume responsibility was revealed during the conference discussions. Line clearing by Hydro forestry crews embraces diagnosis and detection of disease in trees, checking for structurally weak branches and crotches and determining the condition of the root system to learn if the trees are sound and well rooted or diseased and shallow rooted. The work also includes pruning, cabling or removing of trees, and these tasks are done with expert skill and care.

In connection with forestry expansion work, it was revealed that the extent of the line clearance work involves the periodical treatment of 1,500,000 trees spread over approximately 35,000 miles of lines in operation at the end of last year. It is also estimated that the high tension lines are situated on some 50,000 acres of rights-of-way where an undetermined number of trees and brush acres must be cared for at regular intervals. The Commission's present expansion program with the necessary transmission and rural distribution lines adds still further to the count of trees, but the total number of men required to do the work cannot be determined until the lines are in operation and a survey of trees has been made, it was pointed out.

W. Ray Hunter, Chief Forester, explained that through the years the forestry staff has been employed regularly by a number of municipal Hydro systems to perform their line clearing work. This service was curtailed during the war, however, because of the shortage of manpower. It must necessarily still be restricted until the staff of specially trained men has been sufficiently developed to take care of the Commission's needs first, particularly transmission line clearing operations. Few people realize, Mr. Hunter maintained, that there are approximately 750,000 trees that are a potential hazard to the distribution plants and service in the corporate limits of the municipalities.

Inspection Tours

On the afternoon of the second day, the forestry superintendents were conducted on interesting inspection tours. They visited the Niagara Parks Gardeners' school where apprentice gardeners are trained. Later the conference members inspected the station grounds at Hydro's Queenston power plant with A. H. Sharpe, the Commission's landscape engi-

HYDRO'S FORESTRY truck is reported to have the first all-steel body of its kind made in Canada. In attendance from left to right, are: Alex M. W. Moffat, W. C. R. Johnson, and Alfred F. Potter.

SPRAY DOLLY, used for weed control on lawn acres was built in Hydro's machine shops at Niagara. Left to right, G. T. Bradford, Alex. M. W. Moffat, W. J. Kinnear, and William M. Grundy. Forestry Foreman P. J. Hayes is operating the spray dolly, assisted by C. Campbell.



GANDY SPREADER which p... an even distribution of fe... was demonstrated for left to... Alfred F. Potter, A. H. S... Landscape Engineer, Fred E... son, L. C. Warner, and J. ... Cielland. Foreman Pete Ho... operating the spreader.

NEWCASTLE TEAM

(Continued from page 16)

new and attractive" had been added to Hydro's guiding service with these guides on the job.

The British visitors asked many questions about the plant and displayed great interest in inspecting the big control room, the generators and the turbines. Several expressed their admiration of the splendid engineering skill that had gone into the planning and development of this big power station.

The visit to Queenston plant was followed by scenic trips to the principal points of interest. The party also saw the giant whirlpool of the Niagara River from the Spanish Aero Car through the courtesy of the manager, Harold Brooker.

Boarding the bus again, the visitors were treated to views of lovely Oakes Garden Theatre and the beautiful flower gardens in Queen Victoria Park, a close inspection of the Horseshoe Falls, Hydro's Toronto Power Plant and Dufferin Islands.

One of the highlights of the tour was the trip on the "Maid of the Mist," the tiny steamer that plies the lower Niagara River near the base of the American and Horseshoe Falls. The party were the guests of Frank LeBlond, president of the Maid of the Mist Company.

Thrilled Beyond Words

As they gazed up at the mighty cataracts thundering down into the gorge, the British visitors declared that they were thrilled beyond words. Several of them stated that the falls were even more impressive than they had imagined. It was at this point in the tour when a brief but severe electrical storm occured.

The party also had an opportunity to view Hydro's Ontario Power Plant at close range. This power station lies at the bottom of the gorge a stone's throw from the Horseshoe Falls and was skillfully constructed to blend with the cliff behind it.

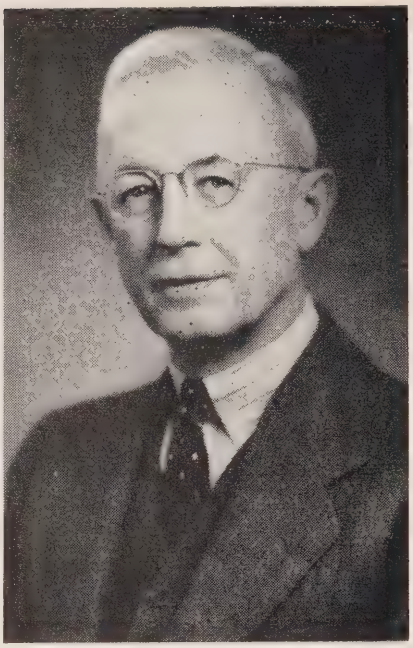
The return trip to Toronto was made by way of the beautiful lower Niagara Parks boulevard and picturesque, historic Niagara-on-the-Lake, first capital of Upper Canada.

The British athletes expressed keen appreciation for having had the opportunity of seeing Hydro's famous Queenston plant and other landmarks in the historic Niagara region. Directors of the Newcastle United Football Club declared that they were sure that this Niagara trip would be the highlight of the team's visit to Canada.

BEDSIDE MEETING

Because Renfrew Hydro-Electric Commission's Chairman, M. J. Sulpher was a patient in the hospital, the Commission recently held a meeting at his bedside. Mr. Sulpher sat up in bed and performed the duties of the chairman as usual.

HONOUR H. J. MUEHLEMAN



HARRY J. MUEHLEMAN, formerly H.E.P.C. Operating Engineer, was the recipient of an illuminated address and a sterling silver service at a dinner held in his honour recently on the occasion of his retirement after having been with the Commission for over 35 years. Mr. Muehleman joined the Commission in 1914 and later succeeded the late H. C. DonCarlos as Operating Engineer. Prior to that he was General Superintendent of the Niagara System.

G. H. Morley Passes

GEORGE HARRY MORLEY, formerly Superintendent of the New Hamburg Public Utilities Commission, passed away recently at the age of 69. He had been in ailing health for the past twelve years and had been confined to bed for several months with a heart condition.

Born in January, 1880, near Dundas, he came to New Hamburg with his parents during his boyhood days. Following his marriage to Matilda Louise Kuhn at Kitchener in 1905, he resided for two years in London, and for four years in Kitchener. He returned to New Hamburg in 1910 when his father sold the local hydro-electric plant to the village and he became the first Superintendent of the local Utilities. He continued in this capacity until ill health forced him to relinquish his post twelve years ago.

Mr. Morley was a member of the Nith Lodge No. 96 of the Independent Order of Odd Fellows, and was a past district deputy grand master of Perth District No. 13, I.O.O.F. For several years he was a member of the New Hamburg School Board.

Surviving are his widow; two daughters, Mr. Roy Schenk and Mrs. Donald Playford, both of Kitchener; and one sister, Mrs. Lewis Niebel of Galt.

CHENAUX

(Continued from page 19)

dam will be poured with the aid of a derrick.

Only one of Chenaux's original two sawmills is now in use. Timber used in the project is mostly local, obtained for a large part from the cleared land, which amounts to 2,000 acres extending between Portage du Fort and Bryson. In addition, a small amount of fir has been brought from British Columbia, for use when large timber is required.

Construction Camp

Housing and recreational facilities are provided for the workers at the well-planned camp a short distance from the project itself. Among the comfortable buildings are bunkhouses, staff houses, a large guest house, and homes for staff personnel and their families. A number of employees live in nearby Renfrew, and commute to Chenaux.

Catering is done cafeteria style under the eye of the Pentagon Construction Company, which is in charge of the project under the general supervision of Hydro engineers.

The men employed at Chenaux have formed a recreation association wich organizes and looks after entertainment for the camp. Though facilities at present consist of one recreation hall housing bowling alleys and billiard tables, as well as a well-stocked commissary, a second hall is currently being equipped for the showing of movies, dances, and church services. The camp also possesses a small hospital, at which three first aid men are available at any hour of the day or night, while a doctor is on call in Renfrew.

AUXILIARY PLANTS

(Continued from page 20)

quently worrying just gets you stomach ulcers. Let your wife do the worrying, she'll do it anyway."

The man who cultivated the ability to laugh, particularly at himself, the speaker continued, would never have very much go wrong with him. The country, he reiterated, who had the ability to laugh, would last longest. He pointed out that England was reported to be on her "last legs" in 1066 and was still going strong, and it was his opinion that she would outlast any country at this time and come out on top simply because of the marvellous sense of humour of her people.

PETERBOROUGH REFUND

Peterborough Utilities Commission recently received a refund amounting to $45,000 in the adjustment of actual cost of electrical power used in 1948, known as the Thirteenth Bill. Last year's Hydro refund amounted to $52,000.

HANOVER

(Continued from page 23)

line with Osmo-Creo. This treatment is designed for better protection from insects and adverse weather conditions."

Important Furniture Centre

Hanover has been acclaimed as one of the greatest furniture-manufacturing centres in Ontario, and a visitor can well believe it. Hydro News was taken on a miniature Cook's Tour of two of its six furniture factories, where Hydro might be termed "the power behind the chair." Amid a fascinating aroma compounded of new wood, linseed oil, glue and lacquer in Knechtel's Limited, makers of bedroom, diningroom and livingroom furniture, we watched the miraculous process by which pieces of wood are turned into chairs, tables, cabinets, and so forth.

Knechtel's, it is reported, possesses the distinction of being the only furniture factory in Ontario to operate an overhead conveyor belt. Run by a 3-horsepower motor, it has over a half mile of track, and is another illustration of the way in which Hydro lightens the tasks of the factory worker. It was installed last summer, at the same time as a highly efficient aerating system was placed in service.

Peppler Brothers, another local furniture plant, and Knechtel's both obtain a large part of their raw materials from the surrounding countryside, and both market their products throughout the country. Other wares along the same lines are chrome furniture and store fixtures, all produced in this industrial centre.

A. J. Metzger, genial ex-Mayor of the town, made us feel very much at home in the Knechtel flour and feed mill, of which he is manager and part owner. Leonard Kraft, who acted as our guide, showed us all around the plant, from the top floor, where the wheat goes in and the flour comes out, to the bottom, where intermediate processes are carried on.

Our next stop was at the Model Hosiery Mills Limited, the Argyle-sock-knitter's paradise. Here, electrically driven machines were turning out tops for children's golf socks "by the mile" as our guide, Clarence Ellis, phrased it. Huge bobbins whirled, knitting machines—24 to a row—produced nylons by the thousands, girls fashioned real and mock seams, and steam presses clamped down on the finished product. Most interesting device of all was a sort of combination vacuum-cleaner and barber's clippers, used to remove excess fluff from nylon stockings. Shaved stockings—what next!

From hose to hens, we proceeded to the Hanover branch of Swift Canadian Company. We just missed seeing the slaughtering process, which had been finished the day before, but managed to catch a glimpse of hundreds of chickens being packed for shipment to all parts of Ontario. Next door was the hatchery, where everything is as sterile as an operating room—a visitor must even take off his rubbers before entering.

Another room was in darkness except for a 6-volt lamp covered by a green filter lens. In front of this weird light a girl was deftly manipulating eggs, detecting any cracks or flaws. Those that passed the test were placed on a conveyor belt, automatically stamped, and deposited in various troughs according to weight.

It is not a case of "all work and no play" in Hanover, though. Recreational facilities include a concert hall, movie theatre, bowling alleys and an ice and roller skating arena. The Saugeen Golf Club, the Hanover Ski Club, and numerous parks and playgrounds provide for outdoor sports, and in the summer full use is made of the Memorial Swimming Pool, constructed recently by the Kinsmen Club.

At least two of Hanover's citizens have won world-wide recognition, one in the world of sports and the other in artistic circles. Tommy Burns, world's heavyweight boxing champion in 1906 and 1907, claims this town as his birthplace, as does Carl Schaefer, noted Canadian artist and winner of a Guggenheim Art Fellowship in 1940. Hanover may well be as proud of these native sons as of being a well-rounded, progressive community.

HANOVER CHAIRMAN



EDWIN H. FAELKER, Chairman of the Hanover Public Utilities Commission, is a native of that town which he has served also as a Councillor for five years and as a Hydro Commissioner before attaining his present position.

Mr. Faelker, who is married and has three sons, is well known in local business circles, having been a successful building contractor for many years. He likes travelling, is fond of hockey but his greatest interest centres on "the broom and stane."

SUPERINTENDENT SAVES LINEMAN

Hydro Superintendent R. E. Flewelling was credited recently with saving the life of Lineman Millard Fisk. Fisk fell across high tension wires while working on a street lighting circuit. The Hydro Superintendent made a block-long dash to the Hydro substation to cut off the 2,200-volt current. Firemen were called to bring Fisk down and he was removed to Dufferin Memorial Hospital, suffering from severe burns.

BRANTFORD REBATE

The Commission recently refunded the sum of $31,888 to Brantford Public Utilities Commission. Known as the Thirteenth Bill, the refund represents the difference between the interim rate collected by the Commission and the actual cost of power which is estimated at the end of the year.

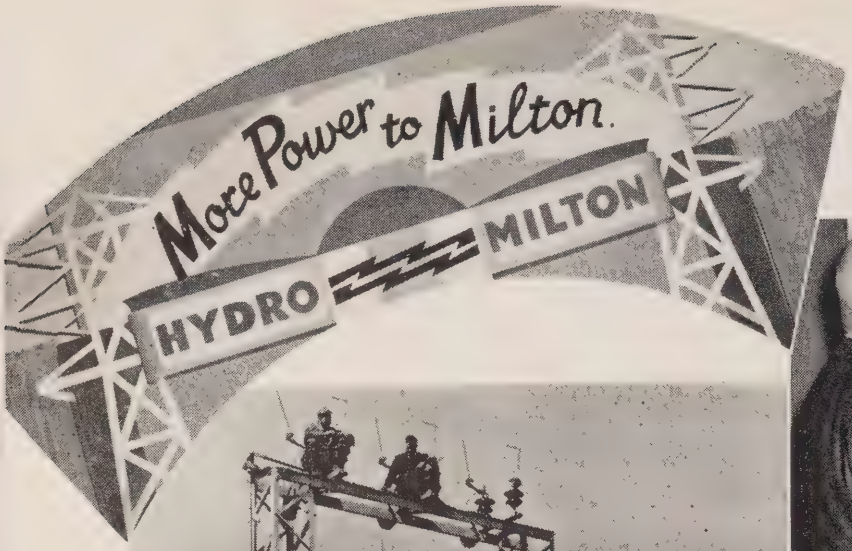
LONDON CONVERSION COMPLETED BY 1951

June, 1951, is the date set for the completion of the change-over from 25- to 60-cycle power in London. An industrial consumer inventory has been started and will be completed by August, 1949. Domestic and commercial inventories will be taken during the period from April to December, 1950.

NEW PRESIDENT



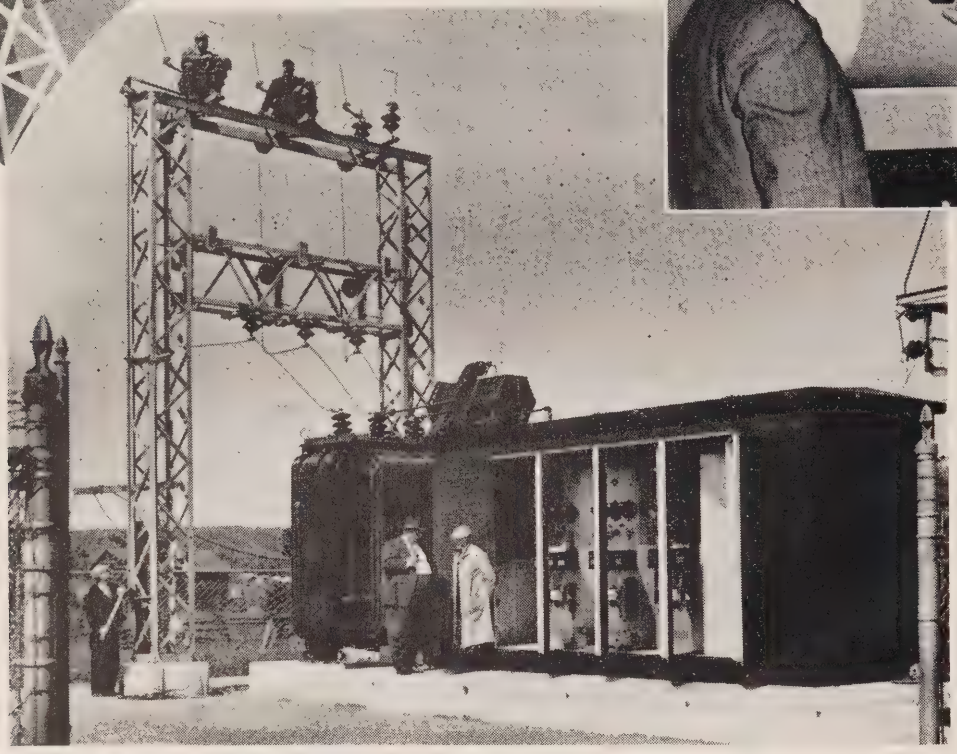
HAROLD A. COOCH (above) was recently elected President of the Canadian Westinghouse Company at Hamilton. Mr. Cooch was formerly Vice-President in charge of Sales, and has been associated with the Westinghouse Company since 1910. Born in Toronto, he served as a Captain with the C.E.F. from 1915 to 1919 and was in France with the 3rd Division of the Canadian Engineers.



Acclaimed By Chairman Robert H. Saunders A "Step Forward In Hydro's Development"



PUSHING BUTTON which symbolized opening of Milton's new substation is Milton Hydro Superintendent, R. W. Philip (above). Witnessing the procedure are the town's mayor, Dr. C. H. Heslop, left, and Hydro Chairman Robert H. Saunders.



AT LEFT is the new substation, photographed just prior to completion which was officially opened May 27. Capacity of the dual-frequency transformer is 2,000-3,600 kilowatts.

by
Edith B. Kent
Hydro News

ANOTHER step in the development of Hydro in Ontario communities was taken with the opening on May 27 of a new 2,000-kilowatt substation in Milton.

Serving the 2,000-odd citizens of Milton and two outside industrial consumers, the substation will have a capacity of 3,600 killowatts when the conversion from 25 to 60 cycles has been completed. Engineers state that the capacity can be raised still further, to 4,500 kilowatts, by the use of air-blast cooling.

The station is already completely paid for by sums set aside for that purpose over a period of years.

At the official opening ceremony, held in the town hall, R. W. Philip, Superintendent of the Milton Hydro-Electric Commission, pushed a button illuminating a large display sign which served as backdrop for the ceremony. This action symbolized the setting in operation of the substation.

The principal speaker, both at the opening ceremony and at the preceding dinner, given jointly by the Milton Commission and the Canadian Club, was Hydro Chairman Robert H. Saunders. Introduced by George Dawson, Chairman of Milton Hydro, as a man noted for his "frankness in telling the people the facts," Mr. Saunders outlined Hydro's three-point development program—municipal, rural, and the development of the Northern Ontario Properties. He pointed out that there were 220,000 rural power consumers in 1948, and that this figure is expected to jump to 260,000 by the end of this year. "The opening of Milton's new substation," he declared, "constitutes a step forward in Hydro's development."

Introducing Mr. Philip, who supervised the erection and installation of the station, Mr. Dawson congratulated him and the members of the Milton Commission on "one of the most complete and up-to-date substations in the province." He also paid tribute to the assistance and co-operation of Hydro engineers who aided in the project.

Rounding out the evening were a number of selections by members of the Hydro minstrel show, the "Black 'n' White Review," and the showing of the film, "Niagara the Powerful," by A. C. Hardy of the Commission's Promotion Department, who supervised the evening's program and was responsible for the backdrop sign and other displays which aroused keen interest among those present.

Official guests at the opening were Stanley Hall, M.P.P. for Trafalgar Township; J. A. Rush, Commissioner; E. R. Lawler, Manager, Toronto Region; E. G. Maddock, Consumer Service Engineer, Toronto Region; Dr. C. H. Heslop, Mayor of Milton; J. A. Blay, Promotion Manager, H.E.P.C.

More Power to Milton



HYDRO DISPLAYS aroused keen interest at the recent opening of Milton's new substation. Here, Jack Brown of the Commission's Promotion Department explains efficient lighting systems to a group of the town's citizens. Other displays included school lighting, adequate wiring, and construction photographs.



LOOKING UP at photos of some of the town's may
left to right: G. Dawson, Chairman; Stanley Hall,
J. A. Rush, Commissioner; Dr. C. H. Heslop, Mayo
Lawler, Manager, Toronto Region; R. W. Philip



SPECTATORS' FACES show all types of reaction to Hydro film, "Niagara the Powerful," part of the entertainment provided at the opening of Milton's new transformer substation.



"BOTTOMS UP" for Jim Keller, Fred Yates and Bobby
Theo Thariton munches chipmunk-fashion on a sandw
ing the refreshment period which followed official

FIERY CORE

(Continued from page 13)

figures given Hydro News by General Superintendent R. C. Mott. In 1930, he told us, the company handled only 70,000 tons of ore. The plants are now treating the vastly increased production of the mines at the rate of 800,000 tons a year.

"This is the property where Thomas Edison, in 1900, directed one of the first geomagnetic surveys in history," Mr. Mott informed us, as we settled down in the company's office for a preliminary chat.

The great inventor was not successful in reaching the orebody since it was covered by 150 feet of gravel and quicksand. The property passed through several hands until the present owners acquired it in 1928. A shaft was sunk and a smelter constructed. By February, 1930, the furnaces were "blown in." At first the ore was all hand-sorted, with only the best ore going directly to the smelter. In 1933 the first concentrator unit was turned over and the first sintering machines installed and operated. A second shaft was started in 1934, and two years later a new crushing and magnetic separation plant was installed. The matte is crushed and barreled and shipped to Norway where Falconbridge owns and and operates a nickel and copper refinery. The Nazis, of course, shut off this source of supply to the Allies when they invaded King Haakon's kingdom. But that didn't help them much, for International Nickel immediately placed refinery facilities at Port Colborne at the disposal of Falconbridge, and the two companies co-operated during the long years of hostilities in speeding up nickel and copper production for armament purposes.

Hydro supplies all the electric power used by Falconbridge. The Commission's Abitibi plant furnishes 25-cycle electricity, while 60-cycle power is provided by smaller plants within closer range. Altogether, a load of approximately 11,000 horsepower is used by the company in its various operations. After passing through the substation, power comes in at 22,500 volts and for most purposes, is stepped down to 550 volts. About 40 percent of the power supplied is used in smelter operations, around 30 percent in crushing and milling, and approximately 30 percent in mining operations. There are approximately 600 motors in use. One of the most important functions of Hydro power is in the production of compressed air from the mines and, at lower pressures, for the smelter plant.

Mining at Falconbridge is carried on entirely below surface and there are about 30 miles of underground labyrinth. Fitted out with miner's togs, including hard hats and battery lamps, and escorted by E. N. Gilje, the mine engineer, we stepped into the passenger cage of the main shaft and were on our way.

About half a mile down, we stepped off at a "station" and followed our guide along a passageway where the only illumination was provided by the small lights attached to our hard hats. Finally, our conductor halted at a spot where a ladder led up through a small opening in the rock above.

"We'll go up here," he said. "Take it easy!"

We smiled. It was only a few feet to our destination. That's what we thought. After negotiating half a dozen vertical ladders in the manway—up, up, into complete darkness, we staggered breathless onto the floor of a working place known as a stope.

Here the beams from the miners' hats were criss-crossing like searchlights in an air-raid, making a grotesque pattern of light and shadow on the rock, timbers and machinery around us. From the far end of the stope came the strident rattle and whine of rock drills. Miners were drilling off the ore with the skill of craftsmen. Later on blasting charges would be fired electrically after the workers had left. Nearer at hand, a miner was operating an electric scraper, scraping previously broken ore into a chute or mill-hole through which it was being carried by gravity to the level below. The ore was all moved mechanically and there seemed to be no back-breaking shovelling as in days of old.

We wriggled down the manway ladders and reached the quiet and cool passageway. We followed our guide along a branch passageway to where an air-operated mucking machine was loading the cars of an electric train. Passing on, we were shown one of the refuge stations to which miners can repair should there be a fire or other trouble in the mine. In emergencies they can be serviced with both air and water, independently of the main system in the mine. To date they have never had to be used for safety purposes, but are used daily as lunch rooms for miners working near by. Electric heaters and well-shaped benches and tables make them comparatively comfortable places.

Employee welfare is particularly stressed both at International Nickel and Falconbridge. Both companies, for many years, have provided housing accommodation for a good proportion of their employees. Dr. H. F. Mowat, Chief Surgeon for Inco, is justly proud of the company's medical service and fine hospital at Copper Cliff, with its staff of 25 doctors and modern surgical and medical facilities. And the company has not only gone all-out to provide for the care of the sick and injured, it has furnished invaluable recreational facilities, group insurance, and a non-contributory retirement system, for its employees. Falconbridge has a welfare fund to which both the company and its employees contribute equally, and for some years now it has maintained a summer camp for miners' children. In general, the 12,000 employees of Inco and the 1,200 at Falconbridge have company facilities at their disposal which are a credit to the Canadian mining industry.

W. J. OSBORNE DIES



WILLIAM JOHN OSBORNE, formerly H.E.P.C. Resident Electrical Inspector in Hamilton with the Supply Inspection Department, died suddenly on May 8 while playing golf. Playing on the eighteenth fairway at the Chedoke Golf Club, he was seized with a heart attack and died in a very few minutes.

Born in Toronto in November, 1911, and known to his many friends as Jack Osborne, he received his public and technical school education in that city. He also took extramural courses in mathematics, electricity, telephony and English. He then spent three years with the Bell Telephone Company on installation of equipment and joined the staff of the Commission nearly nineteen years ago as Laboratory Assistant. About 1938, he was transferred to the Factory Inspection Department, now known as the Supply Inspection Department, which is engaged in the inspection and acceptance testing of all large electrical power equipment purchased by the Commission.

Three years later he moved to Hamilton as Resident Electrical Inspector of equipment built there and in the Niagara Peninsula. He was active in this work until his death, and only shortly before he died he had made an appointment in a local factory to witness some special tests on equipment of a new type.

In 1933 Jack married Gladys Rae Duncan. He was a member of St. Mary's Anglican Church, St. John's Masonic Lodge No. 40, and the Chedoke Golf Club.

Jack's sudden passing, at the age of thirty-seven, has shocked his many friends who remember his many sterling qualities of character and mind and his untiring devotion to duty.

Surviving are his widow and two young sons, Raymond and David; his mother, Mrs. W. T. Osborne; and two sisters, Mrs. James Nicholson and Florence, both of Toronto.

WOULD IMPROVE POWER SERVICE

• Prescott Public Utilities Commission is studying plans for an improved power service throughout the town. Involving an outlay of $15,800, the plans have been submitted by J. W. Young, Hydro Engineer, and provide for a step-up from 2,200 to 4,000 volts, and a two-circuit service. One service would serve industrial concerns exclusively, while the second circuit would be for domestic consumers.

POWER FOR MANITOULIN

• Additional Hydro power will be delivered to Manitoulin Island from Tunnel Development, on the Mississagi River when it is completed in January, 1950. Power from this development will be transmitted to Sudbury, where a portion of it will be used by International Nickel Company. International Nickel will in turn supply power to the Commission at Lawson's Quarry.

NAMED ASSISTANT

• Charles Phelps has been appointed assistant to Claude McMann, Manager of Sarnia Hydro-Electric System, it was announced recently by W. A. Williams, Chairman. A Polymer Corporation employee since 1942, Mr. Phelps is a native of Sarnia, and is a graduate in electrical engineering.

RATIONING IN ITALY

• Severe new rationing of electricity is faced by Central Italy, according to the Daily News Digest, issued by the Federal Power Commission, U.S.A. Commencing shortly, theatres and other places of public amusement must reduce their use of electricity to 40 percent the amount consumed during the months of September and October of last year. Prolonged drought is reported to be the cause of the severe shortage.

ALTERNATIVE SOURCE

• Work on a new Hydro substation in London will be started in the near future, according to an announcement made by the London Public Utilities Commission. Installations at the new substation will include two 27,000-kva transformers, while a third transformer will be installed at a later date to bring the total capacity of the station up to 81,000 kilowatts. Transformers, voltage regulators and switches will be built on open ground. A small control room is to be constructed.

IMPROVED SERVICE

• Building of a new primary line and a new substation at Elmira is expected to start very shortly and, as a result, it is reported, consumers in that area will enjoy improved Hydro service.

RESIGNS AT KINGSTON

• Resignation of W. H. Powell, Assistant General Manager of Kingston P.U.C., was announced recently. Mr. Powell had been associated with the P.U.C. for about five years and has accepted an appointment in Peterborough.

"BUG-AWAY" BULBS

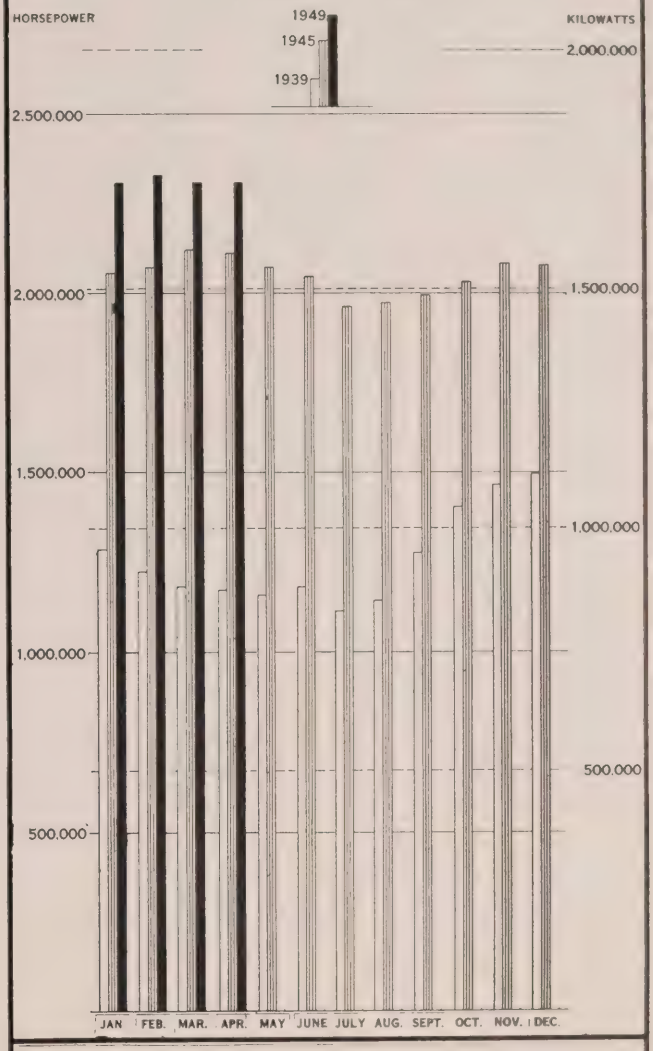
• Development of a new "bug-away" light bulb may make outdoor living more comfortable. Covered with a new yellow enamel, the bulbs discourage night-flying insects, tests have shown.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW APRIL, 1949	APRIL, 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System	1,831,924	1,793,507	+ 2.1
Thunder Bay System	155,717	114,926	+ 35.5
Northern Ontario Properties	205,575	186,959	+ 10.0
TOTAL	2,193,216	2,095,392	+ 4.7
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System	1,723,284	1,704,967	+ 1.1
Thunder Bay System	165,817	115,826	+ 43.2
Northern Ontario Properties	257,560	244,059	+ 5.5
TOTAL	2,146,661	2,064,852	+ 4.0

MUNICIPAL LOADS, APRIL, 1949

SOUTHERN ONTARIO SYSTEM

	K.W.	Domestic Consumers
Acton	1,541	686
Agincourt	302	200
Ailsa Craig	135	167
Alvinston	138	233
Amherstburg	1,209	857
Ancaster Twp.	387	376
Arkona	91	132
Aurora	1,645	899
Aylmer	1,218	861
Ayr	278	248
Baden	447	172
Beachville	675	188
Beamsville	598	480
Belle River	267	398
Blenheim	584	648
Blyth	215	185
Bolton	199	220
Bothwell	153	209
Brampton	3,331	1,902
Brantford	22,227	9,280
Brantford Twp.	2,321	2,314
Bridgeport	233	227
Brigden	118	137
Brussels	240	275
Burford	337	265
Burgessville	79	63
Burlington	1,972	1,464
Burlington Beach	516	774
Caledonia	429	483
Campbellville	55	64
Cayuga	218	214
Chatham	8,160	5,193
Chippawa	345	434
Clifford	121	145
Clinton	881	698
Comber	117	153
Cottam	113	155
Courtright	67	122
Dashwood	125	118
Delaware	91	82
Delhi	602	730
Dorchester	107	162
Drayton	130	181
Dresden	537	560
Drumbo	124	110
Dublin	64	71
Dundas	3,049	1,599
Dunnville	1,417	1,178
Dutton	230	247
East York Twp.	12,958	13,969
Elmira	1,585	650
Elora	503	390
Embro	172	147
Erieau	174	247
Erie Beach	19	98
Essex	587	645
Etobicoke	14,593	9,540
Exeter	930	709
Fergus	1,559	830
Fonthill	288	345
Forest	570	568
Forest Hill	7,088	4,163
Galt	11,056	4,936
Georgetown	1,916	1,085
Glencoe	227	265
Goderich	1,947	1,531
Granton	62	90
Grimsby	861	741
Guelph	11,873	6,413
Hagersville	1,083	463
Hamilton	143,738	46,717
Harriston	546	408
Harrow	622	407
Hensall	284	227
Hespeler	3,216	936
Highgate	102	114
Humberstone	633	869
Ingersoll	3,364	1,974
Jarvis	171	173
Kingsville	670	720
Kitchener	27,374	10,006
Lambeth	177	174
LaSalle	382	374
Leamington	1,907	1,991
Listowel	1,512	955
London	35,457	22,656
London Twp.	567	614
Long Branch	2,026	1,986
Lucan	272	237
Lynden	144	114
Markham	391	393
Merlin	101	147
Merritton	9,662	1,108
Milton	1,461	651
Milverton	377	295
Mimico	2,955	2,607
Mitchell	862	585
Moorefield	85	72
Mount Brydges	98	192
Newbury	54	90
New Hamburg	670	432
Newmarket	2,025	1,295
New Toronto	10,144	2,246
Niagara Falls	9,619	5,471
Niagara-on-the-Lake	725	725
North York Twp.	15,756	11,960
Norwich	470	427
Oil Springs	155	124
Otterville	125	179
Palmerston	528	457
Paris	1,747	1,301
Parkhill	311	375
Petrolia	809	867
Plattsville	221	129
Point Edward	1,849	417
Port Colborne	1,731	1,789
Port Credit	1,070	753
Port Dalhousie	896	779
Port Dover	556	897
Port Rowan	129	226
Port Stanley	790	898
Preston	4,053	1,870
Princeton	149	103
Queenston	118	89
Richmond Hill	680	527
Ridgetown	509	675
Riverside	1,466	1,941
Rockwood	158	192
Rodney	185	296
St. Catharines	24,433	9,801
St. Clair Beach	96	132
St. George	197	186
St. Jacobs	297	153
St. Marys	1,723	1,188
St. Thomas	8,227	5,019
Sarnia	10,645	5,963
Scarborough Twp.	7,768	8,554
Seaforth	996	574
Simcoe	2,357	1,879
Smithville	464	200
Springfield	81	128
Stamford Twp.	3,537	3,233
Stoney Creek	453	400
Stouffville	478	478
Stratford	7,051	4,885
Strathroy	1,458	1,041
Streetsville	546	247
Sutton	321	620
Swansea	2,885	2,224
Tavistock	625	325
Tecumseh	529	848
Thamesford	256	167
Thamesville	246	284
Thedford	132	192
Thorndale	116	89
Thorold	2,904	1,413
Tilbury	946	690
Tillsonburg	1,968	1,438
Toronto	317,892	156,481
Toronto Twp.	5,371	4,331
Wallaceburg	6,369	1,850
Wardsville	72	84
Waterdown	316	317
Waterford	452	472
Waterloo	6,131	2,644
Watford	366	333

MUNICIPAL LOADS, APRIL, 1949

	K.W.	Domestic Consumers
Welland	9,718	3,463
Wellesley	144	154
West Lorne	508	275
Weston	4,629	1,940
Wheatley	316	273
Windsor	47,325	27,995
Woodbridge	1,033	349
Woodstock	8,286	3,847
Wyoming	215	192
York Twp.	24,222	24,626
Zurich	149	187
(66⅔-Cycle)		
Bronte	152	400
Oakville	2,469	1,406
Trafalgar Twp.	768	753

GEORGIAN BAY DIVISION

(60-Cycle)

Alliston	555	502
Arthur	227	303
Bala	153	443
Barrie	4,663	2,897
Beaverton	266	375
Beeton	106	165
Bradford	503	350
Brechin	54	70
Cannington	223	283
Chatsworth	103	126
Chesley	687	492
Coldwater	89	170
Collingwood	2,576	1,928
Cookstown	100	139
Creemore	153	204
Dundalk	253	236
Durham	460	526
Elmvale	217	218
Elmwood	65	94
Flesherton	100	144
Grand Valley	170	209
Gravenhurst	1,191	885
Hanover	1,704	973
Holstein	27	69
Huntsville	1,499	798
Kincardine	951	842
Kirkfield	33	41
Lucknow	398	360
MacTier	122	143
Markdale	223	242
Meaford	923	851
Midland	4,023	1,926
Mildmay	160	220
Mount Forest	594	545
Neustadt	68	143
Orangeville	922	838
Owen Sound	7,373	4,374
Paisley	159	238
Parry Sound	389	1,330
Penetanguishene	1,122	952
Port Carling	145	279
Port Elgin	565	617
Port McNicoll	98	265
Port Perry	342	452
Priceville	19	50
Ripley	88	144
Rosseau	33	79
Shelburne	316	356
Southampton	597	673
Stayner	337	342
Sunderland	152	174
Tara	139	178
Teeswater	199	247
Thornbury	78	297
Thornton	36	72
Tottenham	104	177
Uxbridge	417	512
Victoria Harbour	98	318
Walkerton	1,187	850
Waubaushene	105	274
Wiarton	482	518
Windermere	25	79
Wingham	965	661
Woodville	70	130

EASTERN ONTARIO DIVISION

(60-Cycle)

Alexandria	394	526
Almonte	497	710
Apple Hill	34	74
Arnprior	1,584	1,036
Athens	115	210
Bath	55	90
Belleville	8,159	4,546
Bloomfield	124	197
Bobcaygeon	152	435
Bowmanville	2,759	1,314
Braeside	164	101
Brighton	507	533
Brockville	6,949	3,469
Cardinal	338	419
Carleton Place	1,803	1,209
Chesterville	541	307
Cobden	172	208
Cobourg	2,718	1,617
Colborne	279	302
Deseronto	242	441
Finch	119	133
Frankford	193	262
Hastings	171	301
Havelock	206	329
Iroquois	294	339
Kemptville	441	440
Kingston	17,083	9,223
Lakefield	497	447
Lanark	118	218
Lancaster	61	132
Lindsay	3,585	2,527
Madoc	347	349
Marmora	139	287
Martintown	57	72
Maxville	129	200
Millbrook	153	220
Morrisburg	552	497
Napanee	1,510	1,026
Newcastle	270	256
Norwood	248	256
Omemee	174	204
Orono	96	207
Oshawa	18,690	7,650
Ottawa	29,521	16,849
Perth	1,789	1,282
Peterborough	17,057	8,744
Picton	1,675	1,268
Port Hope	3,045	1,733
Prescott	1,199	865
Renfrew	804	1,581
Richmond	84	119
Russell	94	123
Smiths Falls	3,565	2,318
Stirling	379	336
Trenton	5,411	2,328
Tweed	394	370
Warkworth	86	162
Wellington	239	379
Westport	124	173
Whitby	1,650	1,232
Williamsburg	94	96
Winchester	515	334

THUNDER BAY SYSTEM

(60-Cycle)

Terrace Bay	580	212
Fort William	14,932	8,715
Nipigon Twp.	441	343
Port Arthur	23,769	7,677
Red Rock	296	162

NORTHERN ONTARIO PROPERTIES

Nipissing District
(60-Cycle)

North Bay	5,511	3,980

Patricia District
(60-Cycle)

Sioux Lookout	485	650

Sudbury District
(60-Cycle)

Capreol	490	482
Sudbury	10,848	9,347



ONTARIO PLANTATION

HYDRO News



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VOLUME 36 JULY, 1949 NUMBER 7



"What do you mean . . . I'm lucky?"

Lucky lad! Getting snagged on the wire in his effort to climb over a Hydro barrier . . . probably to recover a ball . . . may have saved his life. Some boys have not been so lucky.

Hydro energy is one of the finest things we have in Ontario to make for better living. But it can stop one from living, if you thoughtlessly give it a chance to flash through your body. Every possible precaution for safety is taken by your Hydro; but once in a while someone gets careless or "takes a chance", and tragedy strikes. A boy climbs a pole and touches a wire. Or he flies his kite near a Hydro line, and it contacts a high-voltage circuit and carries death or injury to whoever is holding it. Sometimes a storm breaks down a line and someone takes hold of the broken live wire with disastrous results. These are just examples of acts that are beyond the power of Hydro to prevent. Your Hydro can only warn of danger, and seek co-operation of parents and teachers and all who have influence with those who might expose themselves to that danger.

Hydro need never be a threat to anyone who:



1. Will not climb poles.
2. Will stay away from distribution lines and transformer stations.
3. Will keep away from fallen wires.



For your safety, in case of trouble immediately notify your nearest Hydro office. But never, never touch a fallen wire.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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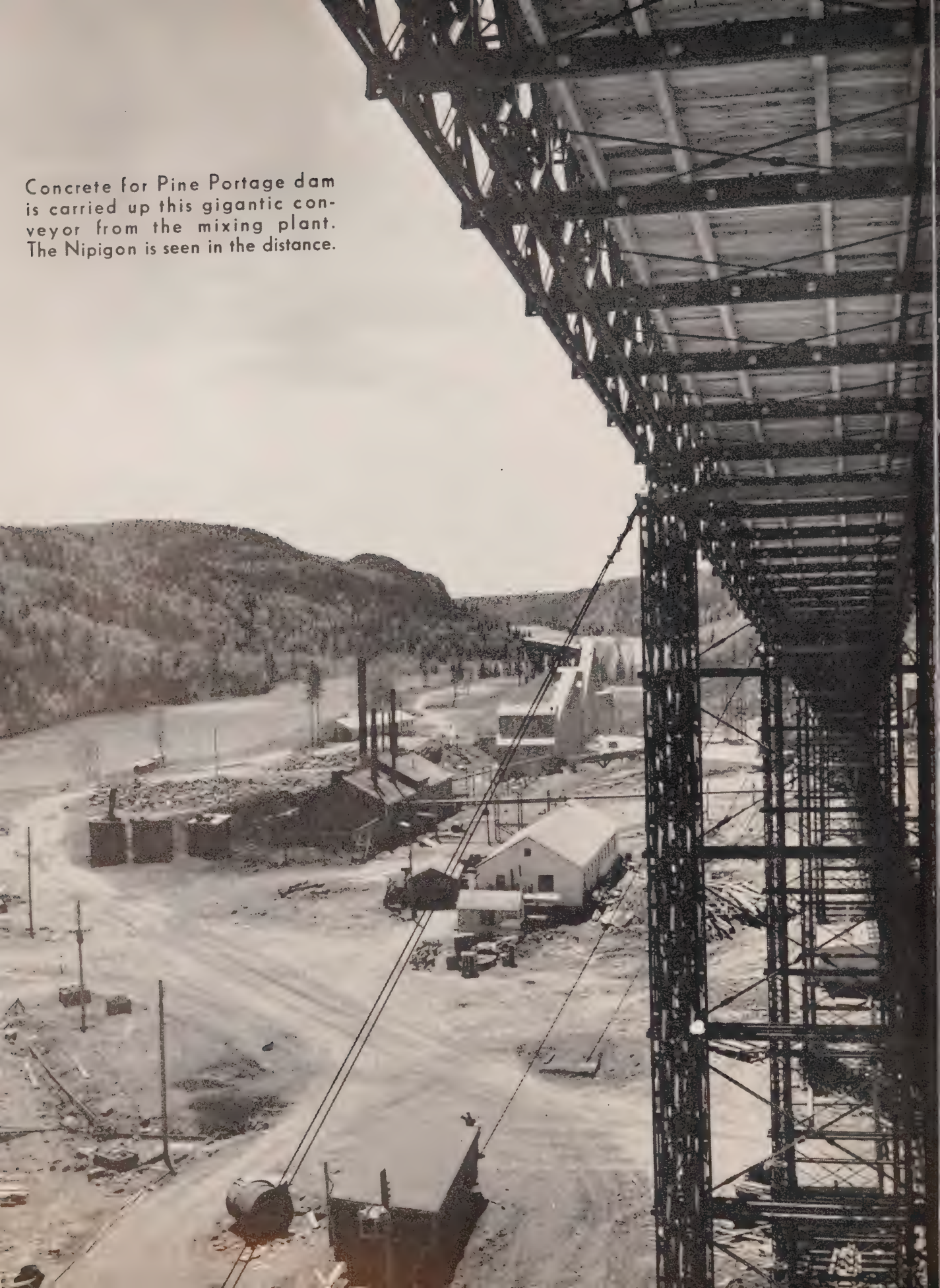
COVER SHOTS

TYPIFYING the beauty of a summer afternoon, this month's front cover, from the camera of E. A. Johnston, Hydro staff photographer, depicts the Commission's Eugenia Falls Generating Station on the Beaver River.

Mr. Johnston also brought back the interesting photograph shown on the back cover. This shot was taken during a recent visit to Pine Portage development on the Nipigon River.

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Concrete for Pine Portage dam is carried up this gigantic conveyor from the mixing plant. The Nipigon is seen in the distance.

DUE RESPECT

SNAPPING on and off a switch has become second nature to most people. It is more or less an established habit comparable to going to bed at night, getting up in the morning, eating breakfast and going to work.

That, in itself, is an indication of the very intimate and vital way electricity has entered into the daily lives of people in the home, office and factory and on the farm.

In Ontario,over the past 40 years, Hydro has steadily reached out to bring new and greater benefits and conveniences to people in all walks of life and, in this way, has made an inestimable contribution to the high standard of living enjoyed in this province today.

And while Hydro has been a faithful and tireless servant, ready to go to work at any hour of the day or night, its masters (the consumers) are expected to treat it in a manner befitting such a servant. In other words, from time to time, reports show that there are a few people who are prone to disregard commonsense safety rules when using electricity. In some cases, the need for safe, adequate wiring and a sufficient number of electrical outlets is ignored and, in other cases, electrical appliances and equipment are used despite the fact that their condition may present a hazard to the user.

The need for observing simple precautions to assure the maximum of safety in using electricity has been emphasized by the Commission on many occasions for the benefit of those who might not be fully aware of the danger involved. At the same time, every effort has been made to acquaint children with the hazards of playing or tampering with Hydro installations. This has been done through the medium of published advertisements as well as the placing of "danger" signs on poles, towers, transformers and other electrical equipment.

The possible consequences of disregarding these repeated warnings were tragically accentuated recently when an 11-year-old lad climbed a 25-foot fence surrounding a transformer station and then up a 100-foot steel tower in order to shoot stones from his slingshot at a bank of transformers. One shot caused a violent explosion and the boy was thrown from the tower. In falling to the ground, he came in contact with a high-tension line, sustaining injuries which resulted in his death.

The lad was apparently unaware that a boyish prank could have such dire results. Many such acts are committed by children who may not be inherently malicious but who are just thoughtless. They may not think of the danger to themselves nor of the hazards entailed in playing or in damaging electrical equipment. Such practices are lamentably common and constitute a problem which can only be solved by the joint efforts of parents and teachers who can make an important contribution in this regard.

While laws have been enacted as a means of curbing thoughtless tampering or damage at all Hydro installations, vigilance on the part of all responsible citizens can be a highly-effective deterrent.

Hydro is a public ownership enterprise of which the people of Ontario can be proud. Commanding the due respect and commonsense of all users, it aims to make a still greater contribution to the welfare and happiness of those whom it serves.

TIME TO RELAX

WITH the advent of summer, thoughts of people everywhere turn to travel posters, cruising dates, and other lures to vacationland.

In the bustle of present-day life, holidays have become more than a pleasant relief from daily tasks. They are a necessity, if one is to carry on one's work efficiently throughout the rest of the year. For Hydro folk, in the midst of the greatest expansion program in history, the chance to "get away from it all" for a brief period comes as a timely boon.

Whether they realize it or not, their opportunity to sail down the Saguenay, fly to Bermuda, build that summer cottage, or just plain "loaf," is a means whereby they can relax from the strain of the preceding winter.

Hydro News wishes to take this opportunity to wish all members of the Hydro family throughout Ontario a pleasant vacation, and to hope that each one will return to his or her duties sun-browned and healthy, and fully endowed with renewed vigour for the tremendous tasks that lie ahead.

Pi
Pine

IN the rugged timberlands along the upper Nipigon River, a fascinating transformation is taking place.

The dense forest, in a very literal sense, has been rolled back from the banks of the Nipigon, and near the present shores of the river, where the rapids now boil and race fiercely, a great concrete dam and power plant are taking shape. This development, known as Pine Portage, provides a strange contrast with the virgin forest land in which it lies. It is further evidence of the ingenious skill and close teamwork of Hydro's engineers and construction men in building a modern power plant in the northern wilds.

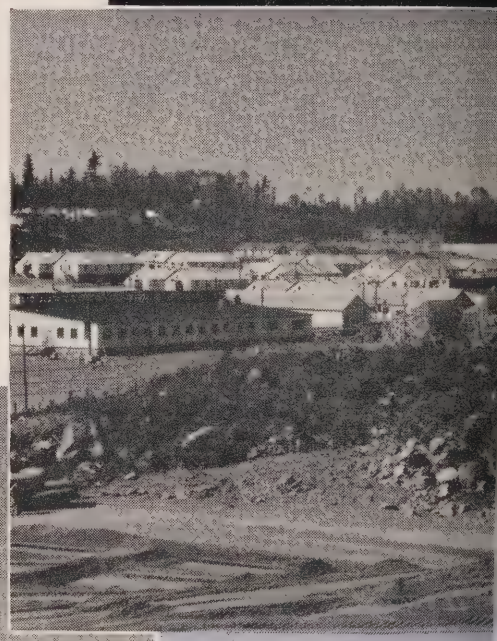
So close to schedule is the work proceeding at Pine Portage that anyone who had visited the site six months ago would not recognize it today. This has been accomplished in spite of the fact that the enormous quantities of construction materials must be hauled through thick bush and jagged rock a distance of 13 miles on a special heavy-duty road which the Commission had to build. This road is the only link with the nearest railway line at Cameron Falls.

When completed, Pine Portage generating station will be the third and largest Hydro plant along the Nipigon. Two units are scheduled to go in service in 1950, to supply 60,000 kilowatts (80,000 hp) to the Commission's Thunder Bay system furnishing additional power for the important, growing pulp and paper and other industries in that area. Provision also is being made for the addition of two units at a later date, if required, which would give the plant an ultimate capacity of 120,000 kilowatts (160,000 hp).

Undertaken at an estimated cost of $19,980,000, work on the Pine Portage project was started late in 1947. First excavation work commenced in June, 1948, in the westerly portion of the site, and first concrete forms were ready in the latter part of December, while the initial pour of concrete on the dam had been completed before the end of the year.

Some interesting facts and figures were learned by Hydro News in determining the extent of the progress made on the Pine Portage development. Since December, more than 120,000 cubic yards of concrete have been poured in the dam construction, H. A. Johnson, Resident

by
C. G. W. Macintosh
Hydro News





THIS PANORAMIC view of H River, depicting the camp

THIS PHOTOGRAPH shows part of conveyor system, stretching alm four city blocks from the concr plant to the top of the main dc In the foreground is the excavat for the tailrace.

e of
rtage

Engineer, and L. J. Gallagher, Construction Superintendent, revealed. It is estimated that a total of about 380,000 cubic yards will be required to complete the project.

An idea of the efficiency and speed with which the concrete pouring is done can be gained from the fact that when forms are ready the pouring goes on day and night until they have been filled. Night crews on the job work under floodlights.

Even severe winter weather with extremely low temperatures failed to halt the work. The forms, completely housed in, were heated with steam through unit heaters, and the concrete pouring progressed as efficiently as in summer.

Contributing greatly to the efficiency of the concreting work, a big automatic mixing plant, composed of three 2-yard mixers, turns out 120 cubic yards of concrete an hour. The coarse aggregate for the concrete is supplied to the mixing plant from the large crushing plant, and virtually all the rock blasted and removed from the various excavations in turn supplies this installation. At the primary crusher, large jaws 42″ by 48″ reduce big boulders to average-size stones. Further reduction in the size of the resulting stone is carried out at the secondary crusher by two cone crushers. Capacity of the plant is 2,000 tons per day.

Fine aggregate for the concrete is hauled by big trucks from pits at Fraser Creek and Bass Creek, an average distance of 14 miles. Most of this mileage is over the Commission's special, heavy duty road running from Cameron Falls to Pine Portage. Likewise, cement is hauled in bulk by tank trucks from Cameron Falls railway siding, near the site of another of the Commission's generating plants on the Nipigon. Approximately 38 railway cars of cement (40,000 bags) a week are required to supply the mixing plant at Pine Portage.

A long conveyor system, about four average city blocks in length, and completely housed in, is used to take the concrete from the mixing plant to the dam. The conveyor, erected on wooden trestles and Bailey bridging, consists of a 36-inch rubber belt, nearly half a mile in length, operating smoothly on troughed steel rollers. An electric motor at the top of the dam operates the rubber belt

(Continued on page 15)





velopment on the Nipigon
in dam, also shows progress
ract.



IMPRESSION of the rugged ter-
n through which the Nipigon flows
captured by this picture. Part of
season's cut of pulpwood is also
hown on its way to the mills.





"NEVER in the history of the Commission have we launch a single project of such magnitude in such a comparativ short time, which will increasingly require the active co-operati of not only every department of the Commission, but ev municipality and public organization in the Southern Onta System as well as every electrical manufacturer."

With these words, Harry H. Leeming, Director of F quency Conversion, set the stage for an intensive two conference of A.M.E.U. members and representatives of Commission who met to discuss many of the complex proble involved in Hydro's $200,000,000 Frequency Conversion gram.

Held at Bigwin Inn, Lake of Bays, in the heart of Ontar famed Muskoka district, June 11-13, the conference cov many phases of this great undertaking, ranging in scope f broad general policy to the intricate, technical details of f conversion, accounting, as well as various other aspects frequency conversion.

(Continued on next page)





Varied Problems Relating To Hydro's Frequency Conversion Program Discussed By Municipal And Commission Representatives During Two-Day Conference

Addresses by Commission representatives were punctuated by discussion or "Question and Answer" periods when the conferees made full use of the occasion to secure solutions to individual and sometimes common problems. These discussion periods not only invested the conference with added interest, but, provided speakers with additional opportunities for elaboration of many points on the work in their respective fields raised during their addresses.

The comprehensive agenda included an opening address by A. W. Manby, Assistant General Manager — Administration, who briefly outlined the history and organization of frequency conversion as well as its progress to date. Mr. Manby also presented his audience with a general introduction to "Policies and Procedures," a new brochure prepared by the Frequency Conversion Division in collaboration with a special committee of the A.M.E.U.

Close Co-operation

Stressing the importance of close co-operation among all divisions of the Commission and the municipalities, Mr. Manby reported that excellent progress was being made in perfecting the organization required to carry out the frequency conversion project.

Discussing personnel, the speaker also pointed out that the staff of the Canadian Comstock Company, which had been retained by the Commission to carry out the inventory and physical conversion of consumers' equipment, now numbered approximately 351 while Hydro's Frequency Conversion Division Staff totalled over 230.

Storage space for conversion materials, amounting to 132,000 square feet, had been provided by the Commission, while 18,000 square feet of space for motor rewinding and an equal amount for meter conversion, had also been allocated, he said. Approximately 260 vehicles of all classes had been purchased since the conversion project was implemented, Mr. Manby stated.

In referring to progress to date, the speaker pointed out that the contractor had been provided with a list of 824 power, 500 commercial and 9,600 domestic consumers — representing a total of 107,000 horsepower — for the purpose of carrying out an inventory of equipment. Surveys and inventories were now proceeding in Scarborough and East York Township, in Sarnia, London and Hamilton as well as the North Yonge area near Toronto, Mr. Manby added.

Trial Operation

Terming the first actual conversion undertaken in East York Township — involving approximately 200 consumers — during the latter part of May, a "trial operation," the Assistant General Manager — Administration voiced the Commission's expectation that full-scale conversion would be underway this fall when several hundred consumers would be converted each day.

In closing his reference to progress of the project as a whole, Mr. Manby declared: "Originally the Commission contemplated a 15-year program. We now hope to finish in approximately 10 years which will mean a substantial reduction in the total cost."

Prepared as a guide to the efficient execution of the frequency conversion project, the new brochure on "Policies and Procedures" was given further elaboration by H. H. Leeming, Frequency Conversion Director, including a complete outline of staff organization and functions, as well as a description of the duties and responsibilities of area offices.

Mr. Leeming also provided his listeners with a lucid picture of the relationship of the Frequency Conversion Division to other divisions of the Commission.

"For instance," he pointed out, "the Director of Engineering is responsible for having 60-cycle power available in the right amount in a certain area by a certain date. Then, too, this division is also responsible for conversion of the Commission's properties and giving engineering assistance to the municipal systems when requested."

Continuing, the speaker stated that processing of purchase requisitions originating with the F.C.D., in addition to follow-up and inspection of materials was the responsibility of the Director of Supply while the Director of Consumer Service was responsible for guidance with respect to consumer relations and publicity. The Director of Operations would come into the picture to a greater extent as the program proceeded, Mr. Leeming added.

Staff Organization

In discussing staff organization, Mr. Leeming reported the Frequency Conversion Division as of June 1, this year, had eight departments and the nucleus of four area offices which were being set up in Scarborough, London, Hamilton and Sarnia. The eight departments and their respective heads were as follows, the speaker announced: Engineering, Harold A. Smith; Planning, W. G. Robertson; Consumer Service, W. R. Harmer; Materials Control, R. N. Kirby; Meters, L. V. Hunt; Co-ordinating, W. H. Edwards; Accounting, G. R. Huxtable and Assistant Personnel officer, J. H. Coo. Mr. Leeming also stated that A. L. Ross had been appointed Assistant Director of Frequency Conversion while J. J. Jeffery was filling the position of Special Assistant.

Area Offices

Area offices, in general, would have an Area Project Manager, the speaker advised, and representatives of the Consumer Service and Engineering Departments would be attached to each area office to co-operate with the area project manager. "They will represent the Frequency Conversion Division in the areas and will have direct contact with the Regional Offices, municipailties and consumers on all matters relating to the work involved," Mr. Leeming pointed out.

Dealing with the financial aspects of the project, the Frequency Conversion Director reported that the total value of materials ordered to date approximated $4,750,000. Initial stocks included 97,700 motors, 237 small portable frequency conversion sets, 31,000 meters, 305 vehicles, 14,000 refrigerator sealed units and 46,000 phono-radio motors.

While orders placed to date represented a cash value in excess of four million dollars, the speaker pointed out that actual expenditures to May 31, this year, were only $1,906,000, substantially under the Commission budget of $1,973,000 for the same period.

Turning to the future, the speaker stated that the "program calls for the conversion of 25,000 kilowatts of connected load this year, starting with Scarborough and the main section of East York." (First actual conversion undertaken in one East York area, on an experimental basis, late in May.)

In order to complete the project within 10 years the schedule had to include the conversion of 110,000 kilowatts of connected load in 1950 and 150,000 kilowatts in 1951 and in each succeeding year, for the remainder of the program, he pointed out. This would involve an average expenditure of some $600,000

(Continued on page 9)

PHOTOGRAPHIC IMPRESSIONS of the recent conference on frequency conversion, as depicted on the opposite page, include a group shot of the conferees, top. The centre illustration shows, left to right, A. W. Manby, Assistant General Manager—Administration; Harry H. Leeming, Director of Frequency Conversion; J. E. Teckoe, Jr., of Galt, Past President of the A.M.E.U. who presided during several of the sessions, and W. R. Mathieson, Secretary-Treasurer of the A.M.E.U. Delegates, representing several Southern Ontario Hydro municipalities which will be converted from 25- to 60-cycle frequency during the next decade, are shown during a discussion period (left), while (right) three of the Commission's Regional Managers, A. S. Robertson, Niagara Region; R. M. McKenzie, West Central Region and E. R. Lawler, Toronto Region, discuss the conference agenda.

"Dumbells"

DUMB-BELL is a term that has become synonymous with dull, stupid people. But there are other meanings. Take for instance the "Dumbells" used by Hydro on transmission lines. These gadgets, similar in appearance to dumbbells, are attached to conductors on high voltage lines throughout the Province.

If you look closely at the steel towers they can be seen on each side, a little distance away from the supporting insulators. There are two types in general use. One consists of a pair of weights suspended horizontally below the cable by a short section of flexible steel cable. The other has the appearance of a dumbbell supported vertically off to one side of the conductor. The former is known as the "Stockbridge" damper, named after the inventor, and the latter is popularly called the "Dumbell," solely on account of its shape.

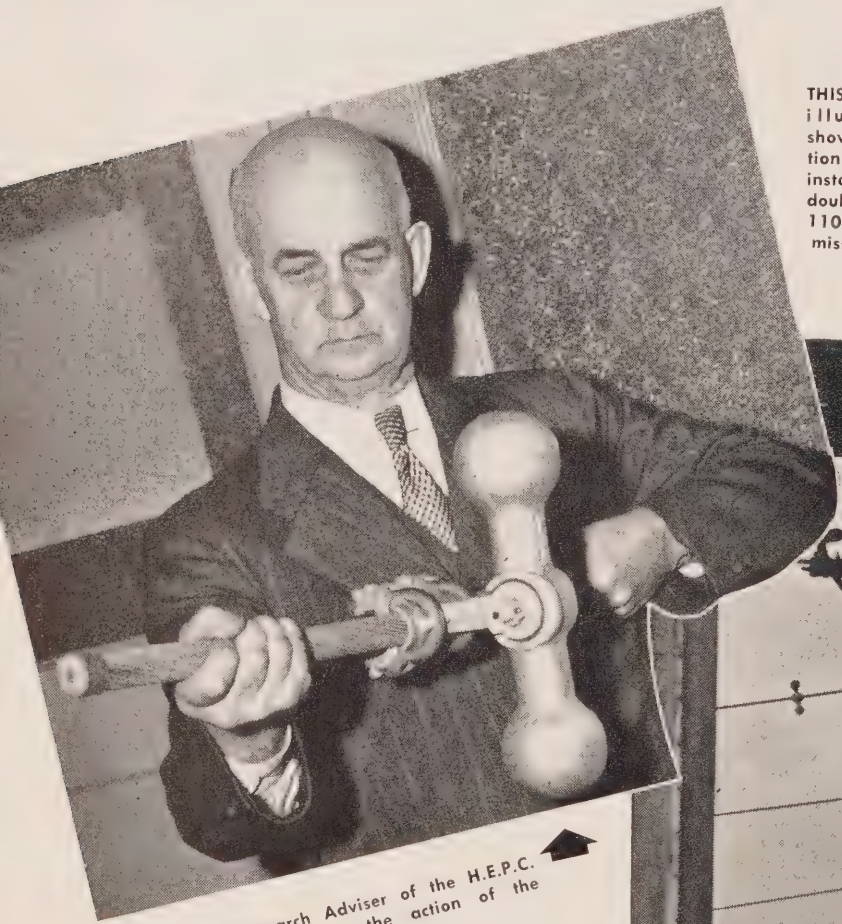
Enquiries made at the Commission's Research Division as to the purpose of these devices has brought to light a number of interesting facts in connection with the development of long-distance transmissions lines.

As the length of spans and the tensions at which conductors were strung, increased, it was found that the strands of the conductors would break at the suspension clamps. It was noted that frequently wind currents caused tones or harmonics to vibrate in standing waves in much the same manner that overtones or harmonics are set up on the strings of a violin or violoncello by the action of a bow. Even in gentle winds of three to five miles per hour conductors were found to vibrate. On many occasions, this motion has caused strands of a transmission line to break.

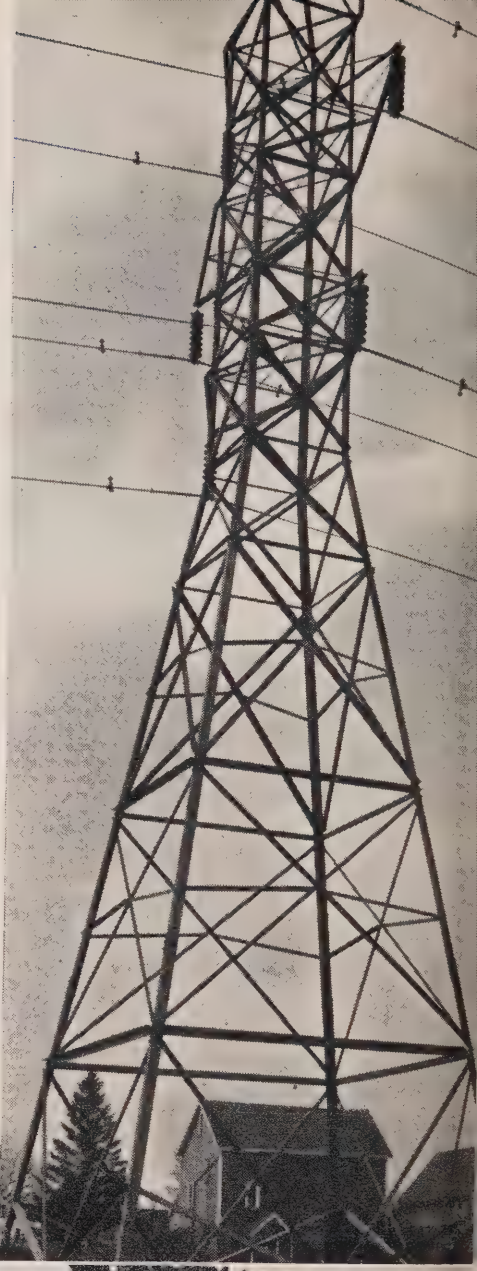
Designing For Longer Spans

Studies on the cost of construction of lines indicated that except for this hazard to the life of the conductors a much

(Continued on page 14)



W. B. BUCHANAN, Research Adviser of the H.E.P.C. Research Division, demonstrates the action of the "Dumbell."



THIS TYPICAL illustration shows vibration dampers installed on a double circuit 110 kv. transmission line.



THIS INSTALLATION of "Dumbells" was taken at the forebay structure of the Queenston-Chippawa generating station.

CONVERSION CONFERENCE

(Continued from page 7)

per month for materials during the peak period.

Engineering Division

The part played by the Engineering Division in connection with frequency conversion was the main theme of addresses by G. D. Floyd and G. A. Bell.

Pointing out that conversion could not be completed at any location unless supplies of 60-cycle power were made available at the moment conversion was completed, Mr. Floyd stated that the scheduling of conversion in an area was a co-operative effort between the Engineering Division's System Planning Department and the Frequency Conversion Division. Scarborough Township, London and Sarnia were selected for conversion owing to the fact that 60-cycle power was available in these areas at present, the speaker continued. He also explained the method of selecting subsequent areas for conversion. For instance, Windsor and the surrounding area were scheduled for conversion in 1951. This schedule was arranged after plans had been formulated to build a 230-kv circuit — operated initially at 155 kv — from Westminster to Windsor, which was expected to be in service by April, 1951, to feed 60-cycle power into Windsor until completion of the Windsor Steam Generating Station, scheduled for service in the Fall of 1951. In concluding his remarks, Mr. Floyd outlined, by means of sketches, the basic plan for the conversion of an area, selecting Sarnia as typical of a number of areas for which basic plans had already been completed. It was pointed out that these plans had to be prepared as much as two years in advance of the beginning of actual conversion to enable the Electrical Engineering Department to provide the necessary temporary and other facilities so that they would be available when required.

Hydro's Engineering Division will also have an important role in giving engineering assistance to municipal systems. This aspect of the Division's part in frequency conversion was covered by G. A. Bell, who pointed out that large amounts of material and equipment had been ordered for use in converting facilities owned by both the Commission and local systems. For instance, 14 mobile substations of 1,000 and 1,500 kva capacities at 60 cycles, had been ordered, Mr. Bell stated. These would be used during the conversion period to step down from 26,400 or 13,200 volts to distribution voltage. Complete with all essential auxiliaries and mounted on trailers, they would be drawn by tractor trucks, five of which had been ordered, he continued. Other equipment ordered by the Engineering Division, included ten 500-kva frequency changers and 12 mobile diesel-driven generators of various sizes up to 500-kva. Large stocks of conversion parts for graphic meters and relays, also a stock of 60-cycle meters and relays, all of which would be made available to municipalities on request, were being accumulated, the speaker stated. Mr. Bell pointed out that the Engineering Division, would, on request, undertake conversion of municipally-owned systems.

Consumer Service

Discussing consumer service, as it relates to the frequency conversion program, W. R. Harmer pointed out that the Consumer Service Department of the Frequency Conversion Division was made up of two main sections — the Negotiations Section and the Consumer Relations Section. The department, as a whole, was responsible for policy recommendations with respect to frequency conversion as it affected all classes of consumers in all areas to be converted, as well as the interpretation of the Commission's conversion policies to consumers, Mr. Harmer also stated.

The Negotiations Section was responsible for conducting negotiations with all types of consumers and with representative groups of consumers or their organizations in the formulation and administration of conversion policies. The Consumer Relations Section was responsible for providing information to all classes of consumers regarding Commission policy procedure, as well as conversion programs and schedules, he pointed out.

Mr. Harmer stated further that the Head Office staff of the department would consist of a Negotiation Engineer — Mr. Ivan Widdifield — who would have industrial, commercial and domestic advisors assisting him. Negotiations in each area under conversion would be carried out by industrial, commercial and domestic investigators, who would deal directly with consumers and report back to Mr. Widdifield.

The Manager of Consumer Relations — O. H. Hershaw — would have an Information Supervisor with staff, a Publicity Supervisor and a Supervisor of Investigation and Claims, the speaker added. The work of this section in the conversion areas would be under the direction of an Area Information Officer and staff, and an Area Claims Officer and Claims Adjusters.

Engineering Problems

Following Mr. Harmer's address, Harold A. Smith, in charge of the Engineering Department of the Frequency Conversion Department, dealt with engineering problems encountered in the conversion of the numerous and varied types of consumer utilization equipment.

In his discussion of this aspect of frequency conversion, Mr. Smith estimated that approximately 3,500,000 items of domestic consumer equipment would have to be converted during the entire program. In addition, some 75,000 commercial and 16,000 industrial consumers would require conversion of additional items. Thus, the total volume of convertible items would be approximately 5,000,000 which, on the basis of a 10-year program, would require the conversion of about 2,000 items per day. In his subsequent remarks, the speaker gave a comprehensive outline of the activities of his department in determining what procedure would be followed in converting various types of equipment for all classes of consumers.

A subject of wide interest to many attending the conference; "Meter Con-

(Continued on page 11)

New Station To Serve Tillsonburg District

CITIZENS of Tillsonburg and the surrounding district will enjoy improved Hydro service with the completion early next year of a new transformer station, now under construction within the town limits.

At present the area is served by a 26,400-volt line from Woodstock, which is rapidly becoming overloaded because of the increasing number of consumers and growing demands for electricity. The new station, equipped with an 8,000-kv.a. transformer operating at 25 cycles, will provide power for some 2,700 consumers, about half of which are urban resident and half rural.

Taking 110,000-volt power from a line 2½ miles distant, it will deliver it at 26,400 volts via three short feeders to existing lines. This, together with the voltage regulator built into the new transformer, will considerably reduce the voltage loss now unavoidably present on the line from Woodstock, and will result in better lighting and cooking facilities for consumers in Tillsonburg and vicinity.

The transformer station is being erected at the rear of a large lot on Tillson Avenue, while at the front will be a rural office and a combined service building and garage. The rural office building will house the R.O.A. offices of both Tillsonburg and Norwich, and the relocation is expected to effect worthwhile operating economies.

At Vienna, 15 miles south of Tillsonburg, a distributing station is presently under construction, with completion expected within the next few months. This will take power at 26,400 volts from Tillsonburg.







INTERMISSION PERIODS at the recent Frequency Conversion
ference held at Bigwin Inn Lake of Bays, found several g
discussing some of the mutual problems involved in the treme
project. Upper left illustration shows representatives of East
Township, where conversion was first undertaken. In the
right photograph, V. A. McKillop, London, is participating i
of the "question and answer" periods. Centre, left—A. L.
Assistant Director of Frequency Conversion, E. H. Banks, Comp
and G. R. Huxtable, Accountant, Frequency Conversion Di
confer on financial matters relating to the frequency conv
program. Lower left—L. V. Hunt, Frequency Conversion Di
and John Dawson, Woodstock, evidence agreement on the s
of meter conversion. The conference was also the occasion f
annual A.M.E.U. Golf Tournament. E. A. Hodgson of Ridgeto
shown on the right receiving the cup from M. J. McHenry, D
of Consumer Service, during the luncheon at the conclusion
intensive two-day conference.





CONVERSION CONFERENCE

(Continued from page 9)

version" was given thorough treatment by L. V. Hunt of the Frequency Conversion Division. In his remarks Mr. Hunt outlined the circumstances preceding the decision to obtain special approvals on meter conversion as an alternative to "kit conversion," a more expensive procedure.

During his address, Mr. Hunt pointed out that the Division to date had submitted eight sample meters to the Standards Division of the Department of Trade and Commerce and had obtained approvals on three types. Sample meters of the remaining types were under production in the Commission Laboratory and would be submitted in due course, the speaker stated. Discussing savings effected in this respect, Mr. Hunt pointed out that approval of one type of meter, previously declared obsolete, had rescued some 25,000 meters from the scrap pile. The speaker voiced the prediction that "it is possible that we may reach still farther back and, by the use of some material from a modern type meter, obtain an acceptable performance from at least one meter type pre-dating 1929." In any event, the Commission was hopeful of reducing the average price of converted meters to $5 or less, about half the conversion cost based on the "kits," he stated.

Accounting and Conversion

Accounting related to conversion was discussed by E. H. Banks, Hydro's Comptroller, and G. R. Huxtable, Accountant, Frequency Conversion Division. In his address, Mr. Banks outlined the costs to be borne by the Commission during the program. These costs comprised those expenditures connected with the supply facilities which would be mainly incurred by the Engineering Division of the Commission; those expenditures connected with the facilities of the ultimate consumers including costs which are incurred by the Frequency Conversion Division in connection with bulk material purchases, motor rewinds and engineering and general services as well as expenditures incurred by the Canadian Comstock Company in connection with miscellaneous material purchases and all conversion labour. Continuing, Mr. Banks stated the Commission would bear the cost of cash settlements made with consumers and Cost Differential payments made to manufacturers of dual frequency motors and lighting fixtures. Mr. Huxtable's address dealt with costs affecting municipal accounts.

This completed the 'address-packed' agenda which featured only one "break" in proceedings. This came on Sunday, June 12, when those attending the conference found time to examine the pleasant surroundings which formed the setting for the meeting. Many of those in attendance also took this opportunity to "chase the pill" around Bigwin's picturesque golf course in an attempt to carry off the coveted A.M.E.U. silver cup, awarded for prowess on the fairways (or the greens!). The honours this year went to E. A. Hodgson, Secretary-Treasurer of the Ridgetown Public Utilities Commission. He was presented with the large trophy by M. J. McHenry, Director of Consumer Services, during a brief ceremony at the concluding luncheon on June 13 when other prizes were also presented.

Better Understanding

The conference, under the alternating chairmanship of Robert Butter, Owen Sound, 1949 A.M.E.U. Vice-President, and J. E. Teckoe, Jr., of Galt, Past President, was also highlighted by a brief message from Chairman Robert H. Saunders, who succeeded in symbolizing the purpose of the meeting by his references to the role of the frequency conversion program and the relationship it bears to Hydro's overall function as a publicly-owned utility. In his address, Mr. Saunders referred briefly to the power situation last fall, "when we were able to get closer to our consumers than we ever had before."

Continuing, Mr. Saunders said: "The Frequency Conversion program gives us another opportunity during the next 10 years of getting closer to one another and to approximately 2½ million people who use Hydro power."

Urging his listeners to work toward the building of a closer relationship between Hydro representatives and consumers, Mr. Saunders stated that this would result in a better understanding of Hydro on the part of consumers "who will come to know that Hydro is their servant."

SUDBURY REVENUE SHOWS INCREASE

Revenue of the Sudbury Hydro Commission in the first four months of 1949 was $26,000 more than the corresponding period in 1948, according to a statement issued recently. Total value of the Commission's system in Sudbury is now $1,447,506 the statement continues, as compared with last year's plant value of $1,361,198.

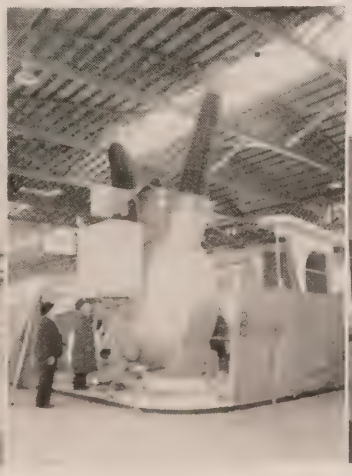
EXTEND RURAL LINES

Twenty-seven miles of new Hydro lines are being erected in the Wallaceburg Rural Operating area to handle increased power demands. Hydro employees attached to the area office, as well as the crew of the Dresden Hydro-Electric Commission, are now stringing the power lines. It is expected that the work will be completed early in the fall.

AT THE BRITISH INDUSTRIES FAIR

HERE are three photographs taken at the British Industries Fair at London and Birmingham. Among the exhibits were (LEFT) a combined electric kettle and saucepan equipped with controls which, its manufacturers claim, will prevent overheating. CENTRE reproduction shows one of the largest pieces of electrical equipment ever displayed at the Fair — a 270,000-volt oil circuit breaker. It stands 23 feet in height and weighs 10 tons. The exhibit on the RIGHT is said to be one of the latest shock-proof deep therapy machines used for treatment of cancer. This machine, it is reported, can be used at any altitude and in any part of the world.







Good junior Citizens



PUPILS' EFFORTS, as good junior citizens, in saving power in their homes during t emergency last fall and winter, were rewarded when the winning schools received $1 cheques from the Toronto Hydro-Electric System. Chairman Loftus H. Reid of the T.H. is presenting one of the cheques to Ann Pindar, a pupil of Whitney school. Lookin are Principal G. H. Gilson, Ted Tiffany, Mary Percival and John McMurrich.

VERBAL bouquets were handed out by Mayor Hiram E. McCallum, Chairman Loftus H. Reid of the Toronto Hydro-Electric System, and others, to the pupils of nine Toronto Public Schools last month. The pupils represented schools that had won awards for the best co-operation by the student body in saving electric power.

One school from each of the nine city wards was selected to receive a $100 cheque from the Toronto Hydro-Electric System for making the best showing in power conservation in their respective wards during the winter months from October 1, 1948, to April 30, 1949. Presentations of the nine cheques were made to the principals of the schools in the presence of pupils and teachers in the board room at Toronto City Hall.

Mayor McCallum told the students that they had proved themselves to be good junior citizens. He said that the efforts they had put forth during the emergency last fall and winter in conserving vitally needed electric power had been much appreciated.

"The keen interest that you took as junior citizens in trying to save power proved of tremendous help in the city-wide power conservation campaign. I thank you for this splendid co-operation," the mayor concluded.

The children, their parents, principals and teachers are to be congratulated for the magnificent way that they responded to the appeal to save electric power during the emergency, Chairman Reid of the Toronto Hydro-Electric System declared. He observed that Hydro was the only commodity still cheaper than before the war, but pointed out that because of the phenomenal industrial expansion taking place in the province and abnormal water conditions last fall, use of electric power had to be temporarily restricted. He praised Toronto school children's efforts to save power in their individual homes.

by
C. G. W. Macintosh
Hydro News

Fred Hamilton, executive assistant to the mayor, congratulated the winning schools. He presented the pupils with copies of the municipal handbook after cheques had been presented to the various school principals.

E. M. Ashworth, General Manager and Chief Engineer of the Toronto Hydro-Electric System and H. J. MacTavish, Secretary for the T.H.E.S., also spoke briefly congratulating the winners.

Refreshments were served to the pupils, teachers and others after the presentations.

The school winner in each ward was established by selecting at random ten homes of pupils in each school district for a recording of the power consumption during October 1, 1948 to April 20, 1949

period, the average consumption being considered the winter's score for that school. This was compared with the consumption of energy for the corresponding period of the previous winter in these same homes as taken from the Toronto Hydro-Electric System files. The ten homes selected in each of the school districts remained a secret. The school obtaining the highest percentage saving was awarded the prize for the ward in which it is located.

The winning schools, and percentage decrease are as follows:

C. E. Manning, decrease 29.6%.

Ward 2, Whitney school, Principal G. H. Gilson, decrease 24.0%.

Ward 3, Cottingham school, Principal R. J. Cole, decrease 15.6%.

Ward 4, King Edward school, Principal H. F. Gulston, decrease 16.7%.

Ward 5, Givens school, Principal C. W. Maedel, decrease 16.2%.

Ward 6, Hughes school, Principal H. E. Carbin, decrease 13.9%.

Ward 7, Davenport school, Principal E. W. Hancock, decrease 23.3%.

Ward 8, Roden school, Principal C. C. Swain, decrease 18.5%.

Ward 9, John Fisher school, Principal W. R. Kingston, decrease 16.5%.

NEW APPOINTMENTS IN ENGINEERING DIVISION

Announcement has been made of two new appointments in the Engineering Division. E. M. Wood, formerly System Planning Engineer and head of the System Planning Department, has been appointed Consulting Engineer on problems related to system planning and electro - technical matters, and his former position is being assumed by G. D. Floyd.



E. M. Wood

In his new post, Mr. Wood will deal with long-range planning problems of the Commission. He will be assisted in this work by D. M. Jones, who is being retained by the Commission on a consulting basis. Mr. Jones has had wide experience in planning problems at the General Electric Company and with the electrical industry elsewhere in the United States.

Mr. Wood's long and extensive experience in the field of planning problems, and his intimate knowledge of the Commission's systems, are considered of great value for the work in which he will be engaged.

The new head of the Department, Mr. Floyd, has been associated with system planning problems of the Commission for a number of years, and over a year ago was appointed Senior Planning Engineer.



POINTING PROUDLY to the Conservation record of their schools, Donna Fisk, left, and Ann Pindar, right, show John Roberts and Lynda Surphlis, of Givens School how they helped out.



A GROUP of school principals shown receiving the cheques for $100 on behalf of their schools. Principal C. E. Manning is presented with a cheque by Toronto's Mayor H. E. McCallum.



IT WAS not all speeches at the presentation ceremony. The cameraman caught this group of children enjoying the refreshments which were provided at the conclusion of the event

"DUMBELLS"

(Continued from page 8)

cheaper line could be built by designing for much longer spans, which would mean that fewer towers would be needed. In fact, the estimated cost per mile would continue to decrease up to spans of fourteen hundred feet.

The problem of devising ways and means of eliminating "aeolian" vibration was taken up by a research subcommittee under the chairmanship of W. P. Dobson, Director of Research for the H.E.P.C.

Much work had been done previously by A. E. Davison of the Electrical Engineering Department who had co-operated in the publication of papers in the technical press and in consultation with engineers of other utilities. Up to that point, no one seemed to have a complete and satisfactory answer to the problem of how to eliminate vibrations and thus make possible the building of lines with longer spans in order to effect important economies in construction and maintenance.

New methods of testing were devised and suitable testing equipment assembled. Some progress reports were published by W. B. Buchanan, G. B. Tebo and J. W. Speight of the Commission's Laboratory staff, and these have attracted widespread attention.

The design of the "dumbell" damper involves the application in an unusual way of some very simple physical properties. This special form is one of many that may be used under a more general term of "torsional," expressive of its reaction on the conductor.

Reverse Twisting Effects

By offsetting the weight of the damper horizontally, it is possible to convert vertical motion of the conductor at the point of attachment to a rotary motion. Then by suitable spacing between damper and clamp, or between dampers, the conductor can be subjected to reverse twisting effects. These twisting or "torsional" stresses introduce mechanical losses in the conductor and tend to keep the range of motion to a minimum. At higher amplitudes, friction losses due to actual motion between strands, also become a very important factor.

The dumb-bell shaped weight is mounted on the end of a horizontal arm but is actually separated from it by a pair of specially formed rubber washers. This support allows a small amount of motion to take place between the arm and supported weight in any direction and reduces the stresses that would be set up in the conductor by a rigid clamp at this location. At the same time, the deformation of the rubber in compression and shear requires some energy and this energy is supplied by the line vibrations. Hence the term "absorber" is appropriate to this damper and by suitable proportions in design any tendency to vibrate is immediately offset by the losses introduced and a permissible minimum of motion takes place.

The action is very similar to the use of rubber cushions, pads, etc., in various forms to reduce vibration in many well-known mechanical structures. For example, the engine mountings in automobiles isolate a large part of the engine vibration from the body of the car. The wheels of modern street-cars in Toronto are built up with rubber plates between the tire and hub assembly so that track noises may be reduced to a minimum.

Dampers have been in use and under observation for the past ten years, and more are being installed each succeeding year. It is difficult to realize that such a simple little gadget should preserve the security of operation of a high-voltage line over a long term of years, and perhaps indefinitely from one type of trouble. Field experience, however, has demonstrated its value and, considering the hundreds of miles on which they are being used and the investment of many millions of dollars represented by these lines, the "Dumbell" is doing a very important job.

Hydro "To the Rescue"



HYDRO RIGGING CREW in action at the forebay of the Ontario Power Plant. In answer to a call from Niagara Park Commission Police, they came to the rescue of a 1949 model car which rolled into the water while its owner admired the view.

HYDRO rigging crews at Niagara Falls have become quite used to fishing deer and smaller animals out of forebays, but last month they had an entirely new type of creature to rescue.

In answer to a call from Niagara Parks Commission police, they marshalled their forces, rounded up the Hydro diver, Robert McAra, and set out to recover a 1949 model car from the bottom of the forebay at the Ontario Power Generating Station.

Owners of the car, Mr. and Mrs. Charles Fleck of Toledo, Ohio, had stepped out for a minute to admire the view, when their auto rolled slowly forward and plunged into 20 feet of water.

A rush call brought the diver and the rigging crew to the scene in a matter of minutes; the car was located and raised, much to the relief of Mr. and Mrs. Fleck, who had visions of continuing their vacation trip minus a car. Within an hour and a half, the vehicle was returned to them by a local garage, drained and cleaned, and they resumed their journey.

The sequel to the story appeared in the Niagara Falls newspaper a few days later, with the printing of a letter of grateful appreciation from the Flecks, commending the "good-neighbour policy" illustrated by the incident.

PINE PORTAGE

(Continued from page 5)

and 120 cubic yards of concrete an hour are conveyed by the belt to a central distributing hopper, thence down a chute to other conveyors running paralled to the dam. These conveyors take the concrete to the forms where the pouring is in progress.

The extent to which the forest has been rolled back from Pine Portage to Lake Nipigon can be judged by the fact that more than three-quarters of the estimated 5,500 acres, between the development and the lake, have been cleared of timber. During the past year, 40,000 cords of pulpwood were cut by the Commission's workers and delivered to water this spring for pulp and paper mills in the area.

Approximately 15 miles of timberland between Pine Portage and the lake will be cut, in certain areas, to a width of almost two miles. The area to be flooded between Lake Nipigon and the development is being cleared to a geodetic contour of 858 feet.

One of the hazards, during the dry season, is the ever-constant threat of bush fires. At the time Hydro News visited the project, all burning was done only by permit issued by the Ontario Department of Lands and Forests. All men and fire-fighting equipment at Pine Portage were subject to call by the Forestry Department in an emergency.

Approximately 1,800 men are on the job. More than 300 of that number, located in various camps up the Nipigon River all the way to Virgin Falls, are engaged in land clearing and the production of pulpwood and sawlogs.

Little excavation work remains to be done at the development. All the excavation from the powerhouse west, including the site of the powerhouse, has been completed. Likewise, the excavation for the spillways has been finished, and work is proceeding on excavation for the tailrace. This is expected to be completed by the end of September.

With the completion this month of the cofferdam across the Nipigon, at the narrow rapids section just north of the dam site, the course of the river at this point will be changed. Then the turbulent waters of the Nipigon will pour through the diversion channel, and work will proceed on construction of the dam across the original river bed and right up the east bank. On this bank a log chute, 700 feet long, will be built to permit the four hundred thousand cords of pulpwood that annually run down the river to by-pass the Pine Portage dam and continue down the lower Nipigon to Lake Superior.



FRAMED BY trees, the dam is pictured from the west bank and shows construction in this section of the development. All the excavation for the main dam has been completed at this point, and concrete pouring is well advanced.

The finished dam will have a maximum height of 140 feet with a thickness at the top of 12 feet and a maximum thickness at the base of 108 feet. This massive concrete structure will provide an impressive sight, stretching between the wide cliffs including the original river bed for a distance of 3,000 feet.

The powerhouse, 286 feet long, will be located on the west bank of the Nipigon River at the base of the dam. Water will be conveyed to the turbines through steel penstocks, 20 feet in diameter, encased in concrete, and after being discharged from the powerhouse, it will be carried to the river below Pine Rapids by means of a 600-foot tailrace channel cut through solid rock.

A spillway section, containing six sluices with a total discharge capacity of 42,000 cubic feet of water per second, will be located between the powerhouse and the present river location. To obtain the required headpond for the development, the water level in the river above the dam will be raised approximately 100 feet to the level of Lake Nipigon, increasing the area of the lake by 14 square miles.

When this has been achieved, the swift waters of the Nipigon, once more, will have been tamed to provide electric power for the thriving Lakehead area. Power from Pine Portage will supplement the output from the Commission's other two plants farther down the river at Cameron Falls and Alexander, and the recently-acquired Kakabeka Falls plant on the Kaministiquia River. These generating stations, as well as the new Aguasabon plant near Schreiber, will serve the great pulp and paper and grain shipping centres of Port Arthur and Fort William, while supplying power to spur the development of mines and and mining communities in the Long Lac area. The Commission's power plants in this district thus will be contributing in large measure to the expansion and prosperity of Northwestern Ontario.

THIS IS the diversion channel which has been excavated to pass the Nipigon River during construction of the main dam. The diversion of the river will permit work to proceed on the dam, which will be built across the original bed of the Nipigon and up the east bank.

CONCRETE FROM the mixing plant is transported by a belt conveyor system to the structure shown on the top of the dam. This houses the motor, a central distributing hopper and a big chute. The concrete drops down the chute to other conveyors and is taken to the forms where pouring is in progress.



A HYDRO NEWS' cameraman caught a construction crew at the i of changing the course of the Nipigon River at the rapids secti Here a cofferdam is being built to block the river which will fl through an excavated diversion channel when the cofferdam completed.









CONCRETE FOOTINGS for the draft tubes of the power plant. Excavation at the site has been completed. Rock excavated at this and other points is crushed and in concreting operations.

THIS UNUSUAL picture shows a large section of the dam framed by the Bailey Bridge structure which supports part of the conveyor system. The dam, when completed, will stretch for a distance of 3,000 feet between the steep banks of the Nipigon.





THE LOWER end of the diversion channel, the rapids section of the Nipigon and the east bank of the river are shown in this photo. The river will be diverted from its natural bed and passed through the diversion channel.

TREES For TOMORROW

by

John A. Murphy
Hydro News.

Hydro's Den Uyl Tree Planter Speeding Reforestation Program—43,000 Seedling Trees To Be Planted This Year

TO THE list of lesser known activities carried on by Hydro in its everyday operation add one more — Reforestation!

We do not mean to imply that this is a recent undertaking in any sense — it was started in 1932 — but very little has been written on the subject to date except for the usual technical reports circulated among personnel directly interested in the project.

Conservation is a subject much in the public eye these days. More and more attention is being directed by science to the need for conservation programs to protect our forests, soil, water and wild life. Naturally reforestation plays an essential part in the conservation of our abundant and valuable timberlands.

As stated above, Hydro began its reforestation program in 1932. In that year several thousand trees were planted along the Queenston-Chippawa Canal. Subsequently more than 300 acres of land were reforested in what we now call the East Central, Georgian Bay and Niagara Regions. However, with the advent of war in 1939, reforestation was suspended for the duration.

In the earlier days the Chief Forester through the medium of the Pole Com-

(*Continued on page 21*)



FROM THE rear, the tamping action of the two packing wheels can be seen as they close the furrow after the seedling tree has been inserted.



HERE IS shown a stand of trees planted along the banks of the Queenston-Chippawa Canal. Prior to this reforestation by the Commission's Forestry Section, the course of the canal was a barren stretch of unimproved land.



THIS CLOSE-UP of the Den Uyl Tree Planter in action shows the planter (left) in the



A YOUTHFUL resident of the Provincial Forest Station at St. Williams is caught by our camera taking an afternoon stroll by the Station's attractive Administration building.



ANOTHER VIEW of the reforestation started by the Commission several years ago along the banks of the Queenston-Chippawa Canal.



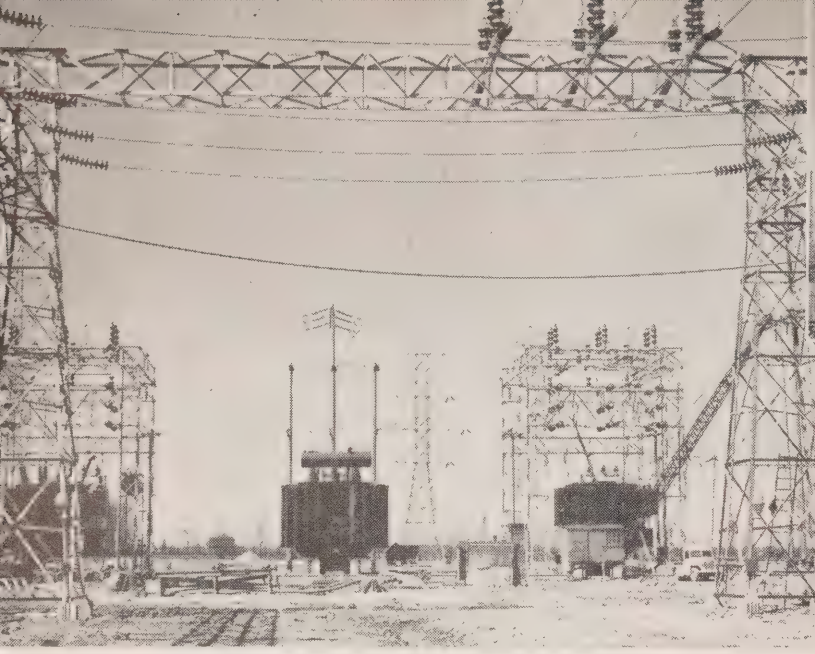


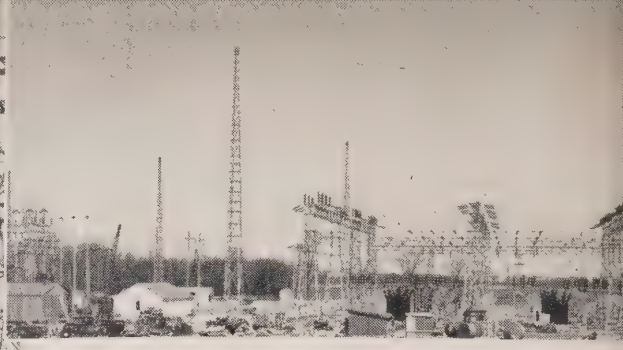
NEATLY TRIMMED hedges and tree-lined avenues are two reasons why the St. Williams Station is a mecca for visitors during the summer months.





ONE OF the carefully-tended beds of seedling trees at the Provincial Forest Sta near St. Williams. Last year 38,000,000 trees in various stages of growth v planted here.





LEFT—THIS photo shows two 75,000 kv.-a. 115 kv. regulating transformers and the 25,000 kva 115/13.2 kv. exciting transformers at Allanburg T.S. In the background the double-circuit 230 kv. transmission towers of the Allanburg-Westminster line are visible. One circuit has been strung and is being initially operated at 115 kv.

ABOVE PHOTOGRAPH gives over-all view of Allanburg T.S., showing bus and switching section. High masts are lightning protective towers which carry a network of sky-wires over the station. White building is the temporary control building.

MORE POWER FOR CONSUMERS

New Circuits Cut Losses

Building Of Two New Transmission Lines Saves 20,000 Kilowatts In Southern Ontario

ELIMINATION of transmission losses of nearly 20,000 kilowatts (28,000 hp) has been effected by the recent completion of two high-tension transmission lines in Southern Ontario.

This saving is equivalent to the delivery of power from the Polymer Corporation at Sarnia during heavy load periods, it has been estimated. Since the two lines were put into service a short time ago they have made available an additional 25,000 kilowatt hours each day to Hydro consumers in the southern part of the province.

Greater portion of this saving, about 14,000 kilowatts (18,760 hp), was achieved by the building of a fifth 230,000-volt circuit from the plant of the MacLaren-Quebec Power Company at Masson, Quebec, to Hydro's Leaside Transformer Station at Toronto. This has made it possible to distribute the heavy load over five circuits instead of the previous four. At present the circuit is carrying the entire 25-cycle delivery from the MacLaren-Quebec Company. Built of steel specially purchased in the United States, it is of a design widely used there and somewhat different in appearance from conventional type of transmission tower hitherto used by the Commission.

The second of these new circuits—also of 230,000-volt construction—is located in the west central section of the province and runs between Allanburg in the Niagara Peninsula and Westminster Transformer Station near London. Before this line was put into service it was necessary to put the full output of four generators at the Queenston-Chippawa plant on the two circuits from Queenston to St. Thomas. However with the addition of the new line only three of the Queenston-Chippawa units are required on the older circuits, while the fourth is connected to the new line. This has resulted in improved voltage control and a decrease of nearly 6,000 kilowatts (8,000 hp) in line losses.

An interesting feature of the Allanburg-Westminster line is the fact that it was not built directly between these two points but was routed near Ancaster. It is expected that upon the completion of the Des Joachims plant a comparatively short stretch of line will be built from Burlington to Ancaster and connected to the Allanburg-Westminster line thereby providing a 230,000-volt 60-cycle circuit between Burlington and Westminster.

The savings effected by the construction of these two transmission lines has been virtually the equivalent of adding a new 20,000-kilowatt unit to the Commission's generating resources. It also serves as a typical example of the manner in which Hydro's engineers are striving to maintain the highest standards of efficiency in the delivery of power to all consumers in the province.

Of the United States total utility energy from hydro-electric plants, 18 per cent is from government installations.

DUAL-FREQUENCY MOTORS SATISFACTORY

Results of tests made on dual-frequency motors have been satisfactory, it was reported by E. W. Henderson, of English Electric Company of Canada, Limited. Mr. Henderson, speaking before the Hamilton Electrical Maintenance Club, reported that the use of dual-frequency motors in connection with the installation of 25-cycle motors which must be made between now and the cycle change, would give the advantage of converting such motors to 60 cycles in a few minutes.

Designed for operation on both 25 and 60 cycles, the dual-frequency motor will, therefore, have a better 60-cycle performance than a rewound 25-cycle motor, he stated.

COMMENDS "KAM" PURCHASE

Purchase of the assets of the Kaministiquia Power Company Limited by the Commission was commended by C. H. Moors, Chairman of the Fort William Public Utilities Commission in a recent statement. Mr. Moors said he was very pleased when advised by Hydro Chairman Robert H. Saunders that the Commission had completed the purchase. Control and operation of all the watersheds in the Thunder Bay area by Hydro would make possible a more efficient distribution of the power generated in that area, especially during peak load periods, Mr. Moors stated.

WILL LINK PLANTS WITH NEW STATION

Construction of an eight-mile transmission line to link Hydro's Crystal Falls and Coniston plants with the new frequency changer station on the Falconbridge road near Sudbury is under way. This is another step in synchronizing all Northern plants, it is pointed out.

TREES FOR TOMORROW

(Continued from page 18)

mittee and the Main Research Committee caused several reports to be compiled and presented to the Commission advocating a definite policy of reforestation on all idle lands owned by Hydro and encompassed in the numerous hydro-electric developments around the province. It was also recommended that all forested land owned by the Commission be included in a program of forest management. When the Administrative Reorganization of the Commission was carried out in 1947, Forest Management became a distinct section of the Operations Division and was placed under the direction of the Chief Forester, W. Ray Hunter.

Niagara First

A comprehensive plan is being followed in carrying out the reforestation program. Each region is being taken individually and land-use and forest surveys conducted on all Commission lands. Apart from the new developments, it is estimated that Hydro owns approximately 13,000 acres of land throughout Ontario. As the surveys are completed, recommendations are made as to what disposition be made of the land — whether it be held under agriculture, reforested, or, in the case of wooded areas, placed under forest management.

It seems appropriate that the first region selected for reforestation was Niagara. The surveys have been completed and executive approval obtained for the recommendations submitted. The actual planting of seedlings began in the spring of 1948, and this brings us to the mechanical hero of our little story — the tree planter.

In March 1949, a Den Uyl tree-planting machine was constructed in the machine shop at Queenston-Chippawa. It is called a Den Uyl planter for the not illogical reason that it was developed by Professor D. Den Uyl of Purdue University. In reality it is a simple but ingenious modification of a standard, general purpose 16-inch base plough. To the main unit is attached a second plough beam and to this, in turn, is attached the "shoe" or trencher that cuts the narrow furrow in which the seedling is inserted. The planter is seated above two rubber-tired packing wheels that close the furrow after the tree has been planted and tamp the soil back in place.

The number of trees planted per day varies with the topography and type of soil. As many as 10,000 or more trees per day may be planted in light sandy soils. However, in the heavier clay soils this figure may be reduced to 5,000.

Superior To Hand Planting

According to the reports of the Forestry Section, the quality of planting done by the machine is superior to that done by hand. Consequently there is a higher survival rate of the seedling trees after planting. In addition the introduction of the machine has reduced costs considerably. Depending on the soil or topography, costs can be reduced to one half or one third of those involved in hand planting.

Thus Hydro's mechanized tree planter is performing an eminently satisfactory chore. In fact, its advocates in the Forestry Section claim it will operate even more efficiently after certain improvements have been made. The latter will enable the planter to function more easily in the heavy silt loams and clays that are characteristic of the soil in the Niagara Region.

St. Williams Nursery

Ingenious a device as the tree planter may be however, it would be pretty much of a total loss without trees to plant. This gem of deductive reasoning occurred to us after only a few hours deliberation and it took practically no time at all to discover that the seedlings used by the Commission in reforesting their properties come from the nurseries maintained in various parts of the province by the Department of Lands and Forests. The oldest of these stations is located at St. Williams, in the heart of Ontario's tobacco country in Norfolk County on Lake Erie, and it was here that we journeyed in quest of further enlightenment on the subject of trees and tree planters.

To call the St. Williams Forest Station a silvan paradise may seem a bit trite, but in our opinion, that is just what it is. The tree-lined avenues and beautifully tended shrubbery are ample evidence that work here is truly a labour of love. From an original area of 100 acres, the station has grown to 4,000. About 500 acres are devoted to growing planting stock, while natural woodland comprises another 1,000 acres. The remaining 2,500 acres are well established plantations used for experimental demonstration purposes.

When the station was founded in 1908, it was in the heart of an area of unproductive, sandy soil and well on its way to becoming wasteland. Today the country is a prosperous tobacco and apple region, dotted with plantations and subdivided by hundreds of miles of windbreaks.

Some idea of the scope of the operations at St. Williams is given by the fact that, in 1948, there were 38,000,000 trees in the nursery in various stages of development. Of that total, five and a half million were distributed during the year for reforestation purposes, including those of the Commission.

At the present time the main theatre of Hydro's reforestation activity is the Niagara Region. Plans call for the planting of 43,000 trees this year and, thanks to the mobile planter, more than half of that total are already in the ground. Trees being planted include red and white pine, jack pine and Scotch pine as well as Norway spruce. A few hardwood trees such as hard maple and white ash are also being planted.

As for future activity, the Commission has authorized a forestry survey of a 3,300-acre tract of land a few miles south of North Bay known as South River Development. Plans for this project are under way and it will be carried out in the near future as soon as conditions permit.

In carrying out its reforestation program Hydro is making an important contribution to the welfare of the province. Ontario's great natural resources are her richest asset, and by using them well and using them with care we can ensure that they will endure and that we will continue to reap their benefits.

THOMAS HEWITT DIES

THOMAS HEWITT, age 65, formerly Secretary-Treasurer of the Ottawa Hydro-Electric Commission, died suddenly while on his way to the office recently.



Mr. Hewitt suffered an attack and was rushed to the hospital by a fire department emergency car but was pronounced dead upon admittance.

He joined the staff of the Ottawa Commission in 1913 and worked in various capacities until he was appointed Secretary-Treasurer in 1938, which post he held until his death.

He is survived by his widow, two sons and one daughter.

RATES DOUBLE

•Although some items in the United States are said to be cheaper than they are in Canada, electricity is an exception. S. A. Ord, Superintendent of Brantford Rural Operating Area, states that he discovered during a recent vacation in Florida that the rates there were almost double the rates in Brantford for a three-month period.

APPOINT SOLICITOR

•Recent appointment of H. Louis Hagey, K.C., as solicitor for Brantford P.U.C. indicated a departure from the usual procedure in conducting the Commission's business. Previously the City Solicitor conducted the Commission's legal affairs. Mr. Hagey's qualifications were termed very suitable because of past service as a member of the City Council and also of the Commission. The new appointment was necessitated by expansion of the Commission's business, it was pointed out.



Food, like the weather, is a conversational pivot. Quite often the two go together. Should warm weather be stifling the appetites of your family, let them take prepared plates to a cool part of the house. Serve buttered rolls, diced meats and cookies. This type of service means more relaxation during the meal hour and less dishes to wash later.

* * *

Should ice cream be the main dessert, your relish tray should be minus green onions. Some people find the flavours do not mix.

* * *

A sauce can often be served as a dessert. Such is the case of Cherry Sauce: 2 cups pitted cherries, 2 cups water, 1 cup sugar, juice of 1 lemon, ¼ tsp. almond extract, and a paste of 2 tbsps. cornstarch with ½ cup water. Simmer until thickened for 20 minutes, stirring constantly.

* * *

Baked ice cream pie is tempting to look at and to eat, yet easy to make. However you must prepare all ingredients early and put them together at the last moment before serving. Have ready a baked pie shell in pyrex pie pan, 3 cups sliced fresh fruit, 1½ quarts firm vanilla ice cream and a stiff meringue of 3 beaten egg whites sweetened with 6 tbsps. sugar. To prepare: Use 2 cups fruit in pie shell, slice ice cream over top and cover with remaining fruit. Spread meringue evenly over entire top of pie, making sure it touches the crust edge. Brown quickly in hot electric oven of 450 degrees about 3 minutes. Serve at once.

It is no mistake when you taste the unusual sauce of clam chowder poured over cooked green lima beans, rice patties or macaroni loaf. The flavour pleases everyone.

* * *

The soup most folks like best is old-fashioned tomato soup. For the home canned product, it is important to select luscious tomatoes of a dark red variety in order to compete with the perfected commercially processed soup.

* * *

Homemakers who have a home freezer thank their lucky stars every day of the year. The development of the home freezer was a definite step forward in women's freedom from household drudgery. The methods of preparing foods for freezing preservation are easy, for a family of four, and the cost of this equipment is paid within a five year term.

* * *

For cloudless iced tea use 3 teaspoons to each measuring cup of cold water. Let this mixture stand in a covered glass or china pitcher in the refrigerator from 12 to 24 hours, then strain, ice and serve as usual. The long time brewing in cold water does not injure the flavour of the brew.

* * *

Begin making tea with a clean pot. Forget the old nonsense about not using soap. Wash your teapot in good, lively suds, as you would a china dish; just make sure you rinse it thoroughly so that no suds are left behind.

We have broken with tradition in the matter of salt boxes for the kitchen. In our new red and white kitchen we have a pottery dish that was made for a mayonnaise bowl. The salt dish masquerades as a ripe tomato with a beautiful green stem for a handle, and a lip opening to insert plastic measuring spoons. We like the wide openings for measuring and the gay touch of colour.

* * *

One-sided flower arrangements are certainly the vogue. Sometimes heavy blooms tip over, although the holders are set in plasticene. When using needle-point holders you can balance such arrangements by inverting another holder at the other end and using a couple of floating leaves to hide it.

* * *

When you remove flowers from the refrigerator they should be covered when bringing them out in the warm room. The change of atmosphere should be gradual.

* * *

PEPPERMINT STICK ICE CREAM

1 tbsp. unflavored gelatine
¼ cup cold milk
1¾ cups scalded milk
1 cup (¼ pound) peppermint stick candy
¼ tsp. salt
1 pint heavy cream

Soften the gelatine in the cold milk. Scald 1¾ cups milk; add softened gelatine and stir until dissolved. Crush the candy and stir into the milk with the salt. Allow mixture to cool. Whip cream and fold into the candy mixture. Pour into a refrigerator tray. When mixture has frozen one inch from edge, remove to a chilled bowl and beat until smooth. Return to the refrigerator tray and continue to freeze until firm. Recipe requires 2 to 3 hours to freeze.

RASPBERRY MOLD

2 packages raspberry-flavored gelatine
4 cups hot water
Dash of lemon juice
2 cups fresh or frozen raspberries

Dissolve gelatine in hot water; add lemon juice and chill until slightly thickened. Fold in raspberries. Pour into a 6-cup mold which has been rinsed in cold water. Chill until firm. Unmold onto a large plate and top with whipped cream, or meringue made as follows: Beat 2 egg whites until frothy. Sprinkle a dash of salt over top and beat until stiff. Gradually beat in 2 tbsps. of sugar. 1 tbsp. at a time. Add ½ tsp. vanilla flavouring, then fold in 2 tbsps. more of sugar, and beat until mixture stands in peaks.

O.M.E.A. MEMBERS VISIT *Des Joachims*









TO get first-hand, on-the-spot impressions of the progress being made in construction of the Des Joachims development on the Ottawa River, a group representing the Ontario Municipal Electric Association visited the site recently. Camera highlights of the visit are shown on this page. From Bill Hogg, the resident engineer, and official guides the visitors learned about this tremendous engineering undertaking — the second largest generation project ever undertaken by Hydro —one which will add 358,000 kilowatts (480,000 hp) to Ontario's power resources by the end of 1950 when all eight units will be in service.

ABOVE: Some members of the party are shown having a brief rest after doing considerable climbing. They include W. R. Stewart, North Bay; Major I. Ginsberg, Huntsville; D. P. Cliff, Dundas; W. E. Theaker, Paisley; G. F. Hutcheson, Huntsville; G. W. Weegan, North Bay; A. O. Leslie, Scarboro; and W. R. Beelby, Huntsville.

TOP LEFT: Among those in this group are Guide Gowan T. Guest, E. H. Banks, Comptroller, H.E.P.C.; Wm. H Hogg, Resident Engineer; Second Vice-Chairman W Ross Strike, K.C.; D. P. Cliff, R. M. Durnford, H. R. Henderson, Woodstock; Walter Dixon, Arthur; S. R. Sarjeant, Orillia; Roy Pierson, Brantford Township; Guy Q. Sykes, W. E. Theaker, Paisley, and William Rattray.

CENTRE: While G. F. Hutcheson, President of the O.M.E.A. was "shooting" R. M. Durnford, Past President, OM.E.A; William Rattray, Editor, Hydro News; and Albert Jennings, Chairman, East York Hydro-Electric Commission; cameraman Keith Scott did some "shooting" himself

BOTTOM: Guide John Ray explains some of the operations proceeding at Des Joachims.

NEWS IN BRIEF

TOWNSHIP TO INSTALL 97 STREET LIGHTS

• McKim Township Council recently gave three readings to a bylaw authorizing the township to enter an agreement with Hydro for installation of 97 street lights in three of the township's four wards bordering on Sudbury. Council decided to install 300-watt lights at main intersections and 200-watt lights in other locations.

EXTEND HYDRO SERVICE

• R. H. Starr, Consumer Service Engineer for Hydro's Northeastern Region recently announced that construction of 52 miles of new line has been under way in the Warren River Valley and Field areas since early in January and that a transformer station will soon be started. The new station will be built north of Warren with power to be tapped from the line running from Crystal Falls to Sudbury. Power from the new station will serve 300 new consumers from the lines now under construction. These lines will be further extended 34 miles to serve another 220 consumers.

HONOUR DR. HOGG

• Dr. Thomas Hogg, former Chairman of The Hydro-Electric Power Commission of Ontario, has been awarded the Sir John Kennedy medal in a 63rd annual meeting of the Engineering Institute of Canada. The medal is given "for outstanding merit in the engineering profession and noteworthy contributions to the science of engineering."

HYDRO ACQUIRES MOOSE LAKE PLANT

• Purchase of the Moose Lake power plant at Steep Rock Lake and approximately 30 miles of transmission line from the Ontario-Minnesota Pulp and Paper Company, Limited, has been announced by the Commission. The plant will be used as a synchronous condenser station for voltage regulation, and will be under the jurisdiction of the Northwestern Region for operating purposes. However it is an investment of the Northern Ontario Properties, which are operated by Hydro for the Provincial Government.

CONTROL SYSTEM FOR WATER HEATERS

• R. H. Martindale, Secretary-Manager of the Sudbury Hydro-Electric Commission reports that Control Valves for the Flat Rate Water Heater System are being installed in both #1 and #2 Substations.

When the entire system is installed Flat Rate Control will be maintained over seven 4,000-volt, 3-phase feeders and the Commission will be able to shut off any or all heaters on the various feeders at will and restore service on the heaters in the same manner. By turning off the water heaters for periods of peak loads, the Commission will be able to save on its peak load power costs. It is expected that the entire system will be controlled within the next two months, by which time it is expected that all of the necessary equipment and apparatus will have been delivered to the Commission.

POWER OUTPUT INCREASES

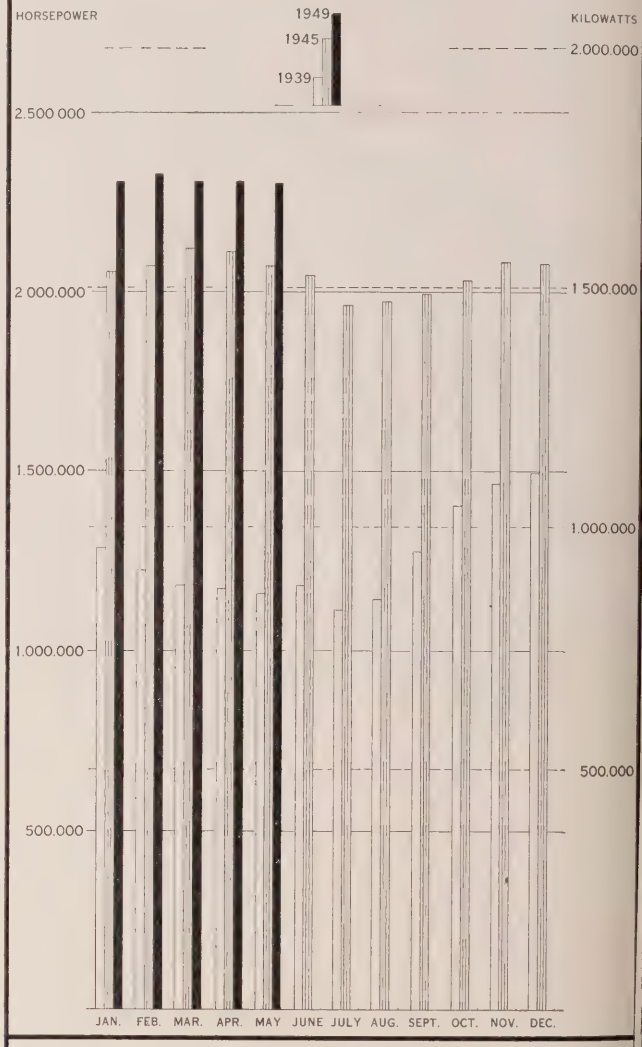
• Canada's electric output from central electric stations totalled an all-time high in April, 1949, the bureau of statistics recently reported. Total for April was 4,150,346,000 kilowatt hours as compared with 3,727,459,000 in April, 1948. Consumption of primary power also showed an increase.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SOUTHERN ONTARIO SYSTEM

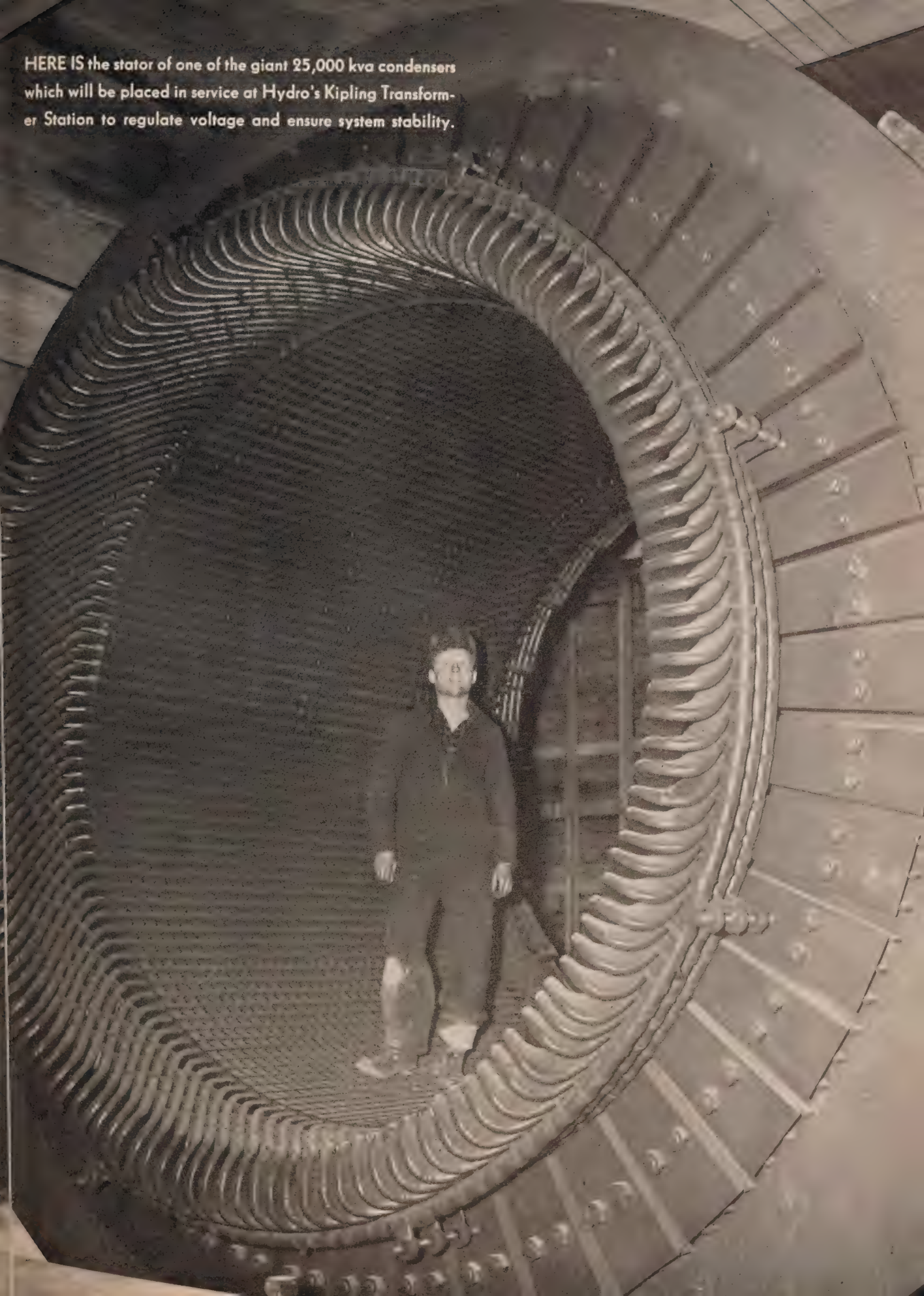
EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW MAY. 1949	MAY. 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System	1,839,490	1,833,648	+ 0.3
Thunder Bay System	158,407	115,530	+ 37.1
Northern Ontario Properties	208,821	191,120	+ 9.3
TOTAL	2,206,718	2,140,298	+ 3.1
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System	1,720,390	1,709,483	+ 0.6
Thunder Bay System	172,307	116,030	+ 48.5
Northern Ontario Properties	255,231	243,410	+ 4.9
TOTAL	2,147,928	2,068,923	+ 3.8

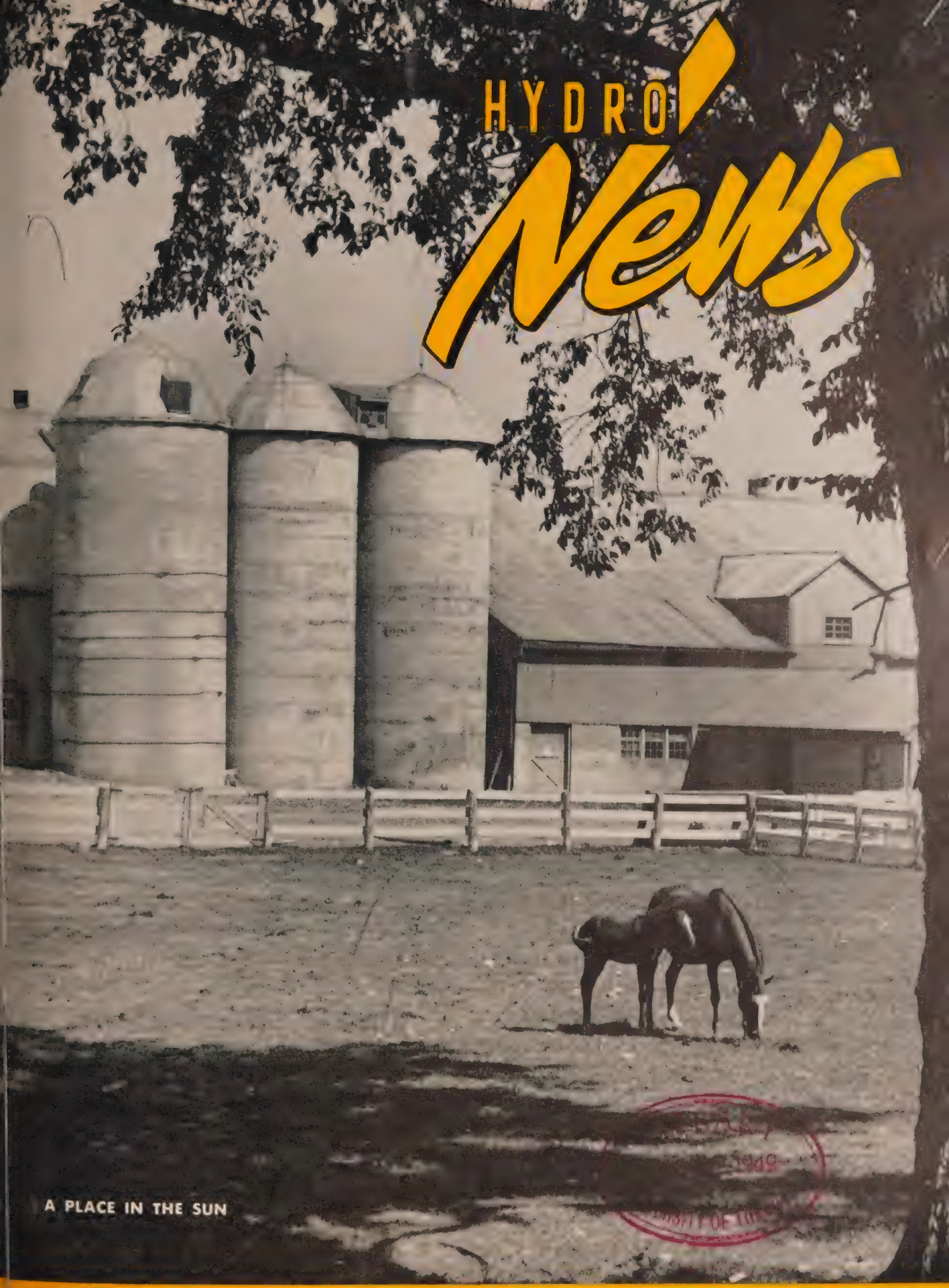


HERE IS the stator of one of the giant 25,000 kva condensers which will be placed in service at Hydro's Kipling Transformer Station to regulate voltage and ensure system stability.



Nipigon waters are pouring through this diversion channel to permit completion of the Pine Portage dam

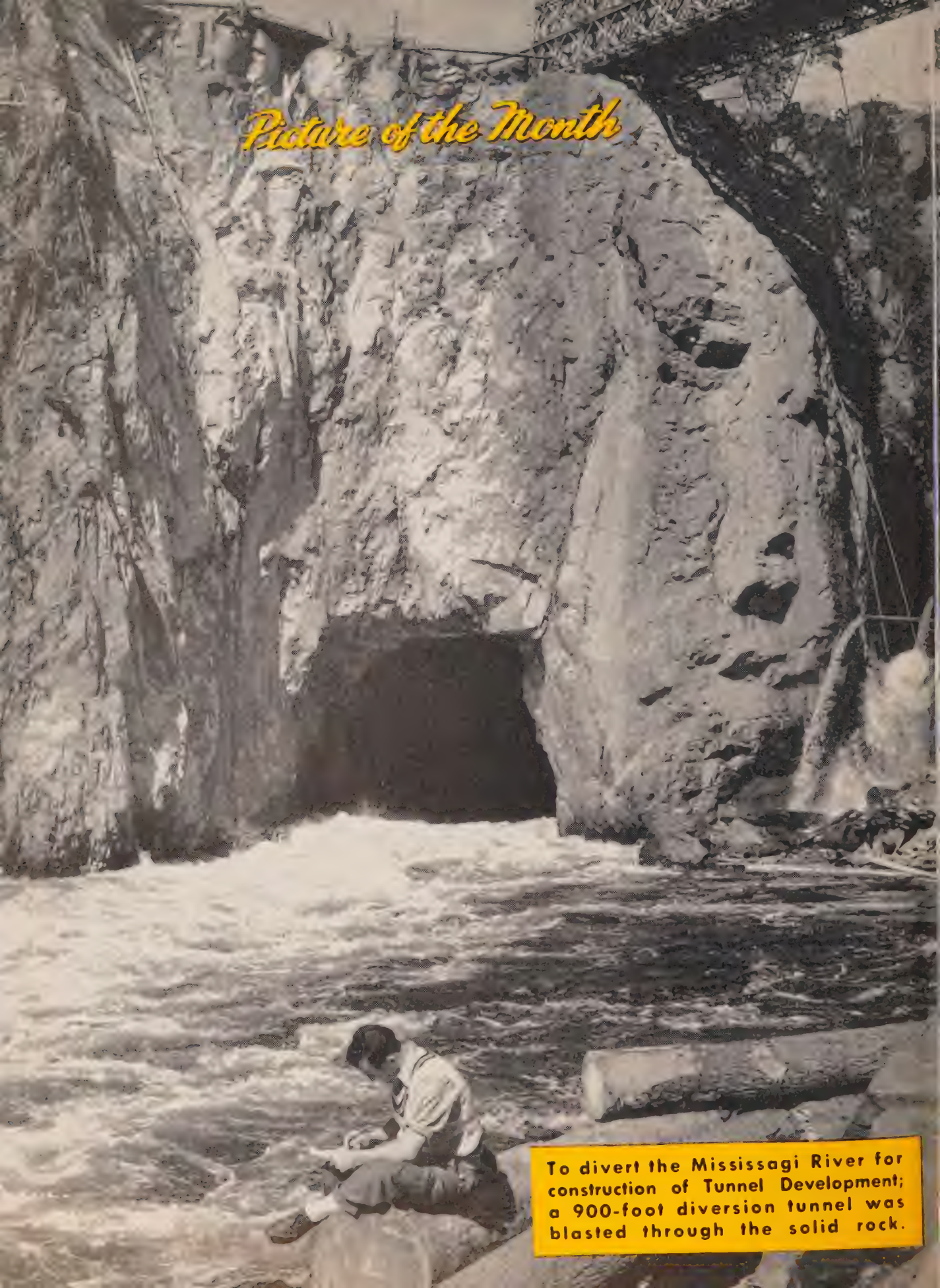
HYDRO NEWS



A PLACE IN THE SUN

VOLUME 36 AUGUST, 1949 NUMBER 8

Picture of the Month



To divert the Mississagi River for construction of Tunnel Development; a 900-foot diversion tunnel was blasted through the solid rock.

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER SHOTS

PASSING a modern farm in the Woodbridge area recently, a Hydro staff photographer recorded the peaceful rural scene depicted on this month's front cover.

The unusual photographic impression of main dam construction at Hydro's Tunnel Development on the Mississagi River, which forms the back cover illustration of this month's edition, is from the camera of E. A. Johnston, Hydro staff photographer.

Volume 36 **Number 8**

AUGUST, 1949

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A WELL-KNOWN landmark, both in Toronto and abroad, is the Princes' Gates at the eastern entrance to the Canadian National Exhibition. These gates were completed in 1927, when the Duke of Windsor, then Prince of Wales, accompanied by his brother, Prince George, officiated at the opening ceremony.

ANOTHER PUBLIC SERVICE

A RECENT announcement by Chairman Robert H. Saunders has focused attention upon the highly important work which is being done by Hydro in the field of land conservation.

This year alone more than 43,000 trees are being planted on lands owned by the Commission. Ultimately, this program will result in the reforestation of hundreds of acres of land throughout Ontario.

Reforestation does more than protect land from erosion. It helps reduce siltage in the storage basins of generating stations and, at the same time, exercises a regulating influence on the run-off on watersheds and contributes favourably to the flow of rivers and streams.

Actually, Hydro's reforestation program was inaugurated in 1932 and carried on until the outbreak of war when it had to be temporarily interrupted.

While this undertaking is of vital importance in relation to the day-to-day operations of Hydro, its benefits, over a period of years, will be far-reaching for it supplements programs of a similar nature directed by government and other agencies.

The increasing emphasis which is being placed upon the importance of the Commission's forestry operations is reflected in the character of the recent conference of Regional Forestry Superintendents from the nine Commission Regions. This was the first in a series of such conferences, and present plans call for such gatherings three times a year—in January, May and September.

The objectives of these conferences are highly significant and include an even more efficient standardization of the Commission's forestry practices and techniques and the maintaining of good public relations with property owners, government, county, municipal and other officials.

As is true in other phases of the Commission's day-to-day service to the people of Ontario, the work in the Forestry branch is under the direction of thoroughly trained and highly skilled personnel.

The Chairman's announcement on the subject of reforestation is timely for it points up another all-important public service Hydro is rendering. In this case it is related to land conservation—a problem which has been increasingly occupying the attention of farsighted public men and thoughtful citizens.

"EX" TIME AGAIN

ASSOCIATED with the Canadian National Exhibition is a "certain something" which endows this world-renowned event with a glamour all its own. The children who trooped into the "Ex" some 60 years ago are now returning with their "children" and their grandchildren. Every year, exhibitors and visitors from many lands are in attenance, helping to add to the wealth of colour, education and interest to be found within the fine structures erected on the 350 acres of C.N.E. grounds on the shore of Lake Ontario in Toronto.

Down through the years many men have devoted their time and talents to the building of this great Canadian show window. Pre-eminent among these men is the General Manager, Elwood Hughes who has been widely acclaimed as one of the world's great showmen. Another man who had a major role in putting the "Ex" on the map is Fred Wilson, the genial Director of Publicity, who was at one time Sports Editor of the old Globe and who was rated among the top-flight sports writers in Canada.

When speaking to Hydro News recently, Fred stated that, given good weather, it was highly probable that a new attendance record would be established this year. Last year, 2,612,000 persons passed through the gates of the C.N.E. Already, it is reported, most of the best seats have been sold for all the performances in front of the new Grand Stand which was officially opened recently when the famous Newcastle United soccer team played before 23,000 spectators.

One of the highlights of this year's C.N.E. will be the atomic energy display. For the first time, laymen will have an opportunity of actually seeing atoms in action. Every safety precaution, it is reported, is being taken in connection with this exhibit with visitors to the C.N.E. being permitted to view the spectacle through a specially designed glass window.

This exhibit will be another among two or three thousand other good reasons why a new attendance record may be established this year between the time when the gates are opened on August 26 and the crashing and cascading of the final fireworks on September 10.

ONTARIO'S EL DORADO



GOLD MINERS resting in a drift.

—National Film Board Photo.

Hydro News Visits Gold Mines In Porcupine Area Of Northern Ontario Where Electric Power Is A Basic Factor In Development And Operation — Commission Construction Program Seen Assisting Further Expansion of This Industry

by

Harry M. Blake
Hydro News

OUTSIDE of the Transvaal, which is in a class by itself, Northern Ontario is today the greatest gold-producing region in the world. Its output of the precious metal for 1948 is estimated at 2,068,978 fine ounces, valued at $72,414,230. This represents about 60 percent of the total output of the Dominion and is very nearly equal to last year's entire gold production in the United States. And last year was by no means a banner year. In 1940 this province contributed 3,261,688 of the 5,311,145 fine ounces mined in Canada. Following the inevitable war-time set-back, gold mining in Ontario is believed by many to be just beginning to recover its prewar stride.

And what a stride that has been!

If you were living in Ontario in the "gay nineties," you must remember the tall stories that were passed around about the South African discoveries, the fabulous Australian "nugget" and the new "strikes" in British Columbia. But you will recall nary a word about gold mines in your own province. There was a good reason for that. There was not a single mine of any consequence in operation.

In 1891 Ontario produced only 97 fine ounces of gold—scarcely enough of the precious metal to meet the annual requirements for wedding rings in the city of Toronto alone. This meagre output was less than one quarter of one percent of the total Canadian production of 45,018 fine ounces, which was not very impressive in itself. Some years later came the mad rush to the Yukon—the famous "Trail of Ninety-eight." But few even then imagined that there was accessible gold in the rocky "wilderness" through which the Canadian Pacific Railway had driven a steel highway to link the East with the West in fulfilment of the promise made by the Government of Canada to British Columbia when that province entered Confederation in 1871.

Some of the people who had been laying rails and ballasting track remained in the North after their jobs were completed. They were the stuff of which prospectors are made, and they were especially active north and northeast of Sudbury and North Bay. Reports got about that there was gold in the country and men with money to spend began to take notice.

With the building of the Temiskaming and Northern Ontario Railway (now Ontario Northland Railway) by the government of the province, gold mining became an established industry, and in the year preceding the First World War, Ontario contributed 219,801 fine ounces to the Dominion's total production of 802,973 fine ounces. The industry was now able to afford a pair of "seven-league" boots, and it was not long before it was hopping across to the northwestern corner of the province where further discoveries were being made in the quartz rocks of the pre-Cambrian shield.

The remarkable achievements of the gold mining industry of this province in recent years—apart from the favours of Nature, good organization and sound management—can be attributed very largely to the increased use of electric power, which is now provided almost in its entirety and at reduced rates by The Hydro-Electric Power Commission of Ontario. Electricity speeds up operations and processes in the mills and drives and controls the hoisting equipment for the cages and ore skips. It compresses the air which operates the rock drills, diamond drills, slusher hoists, loaders and other air-driven equipment used under ground and drives the numerous fans in the ventilating system through which healthful working conditions are maintained to the deepest levels.



CONCRETE SHAFTHOUSE at the Hollinger Mine.

Before we scrutinize the role that Hydro plays in hard-rock gold mining as carried out in Ontario and have something to say about the life of the workers in a vocation where jobs are assured all the year round and in bad times as well as in good, let us for a moment turn back the page.

Mining In Ancient Times

Alluvial mining—the washing and panning of river gravels for gold—and surface exploration of ore-bearing rocks, similar to what we call "prospecting"—have been carried out from time immemorial. With the development of the ancient civilizations, hard rock mining—the following up of the ore bodies below surface diggings—saw its beginnings. Without explosives, without power-driven machinery of any kind, workings were sometimes carried to a depth of 200 or 300 feet. The rock faces were first split and fractured, insofar as was possible, by fire-setting followed by quenching. Then the miners went to work with picks, chisels and hand-drills, toiling in narrow, circular galleries, averaging, as a rule, only two or three feet in diameter. On his knees, or often in a prone position, one man broke down the rock. It was then passed in baskets along a line of crouching workers extending to the adit or entrance. When the drifts were carried too far for this procedure, the ore was probably elevated to the surface through one of the vertical shafts which provided a sluggish and very inadequate ventilation for the mine.

The Egyptians, the Carthaginians and even the cultivated Greeks usually employed slaves of the lowest class, malefactors and prisoners of war in these mining enterprises. In many cases, the miners are said to have been forced to work in fetters until they dropped from sheer exhaustion, to be replaced by other prisoners of whom there was generally an abundant supply. Under the Romans, as their empire became stabilized, workers in the gold mines, located mostly in Spain and the Danubian countries, were frequently recruited from the male population of closely adjacent provincial towns. These men, who were neither felons nor prisoners of war, since their nations had



SETTING UP a diamond drill to obtain samples of ore before further drifting and stoping.

long since been subject to Rome, appear to have been paid a small wage and to have enjoyed some degree of legal protection. The work seems to have been carried out in regular shifts. Many of the miners lived at home with their families, and in populous centres hours were allotted them for the use of the public baths or thermae. Nevertheless, labour in these ancient mines, even under the most humane administration, must have been about the most exhausting work a man could undertake.

Gold Mining Of Today

What a contrast gold mining in Ontario offers today! Here free men, not slaves, are employed at good pay and under working conditions that would have made any of those old-time miners—ancient or medieval—permanently goggle-eyed. There is opportunity for advancement to important supervisory posts, and today miners can enjoy a comfortable standard of living, that, apart from pomp and display, was denied in the olden days even to kings and emperors. True, there are hazards in auriferous mines that cannot be entirely eliminated by the



THE UNDERGROUND hoist room at the McIntyre Mine.

most careful planning, but the number of accidents does not begin to compare with the toll taken by traffic in the cities and on the highways of the province. And the work itself is immensely lightened not only by plenty of restorative rest and recreation but by modern mechanical equipment served directly or indirectly by Hydro power.

Starting A Mine

When a discovery of gold has been made, the veins are stripped of overburden, or trenched across at definite intervals, and sampled. If a vein is found to be of commercial grade, it is diamond drilled, and if it carries to depth, a shaft is sunk from which levels are established at regular intervals. The various levels are then opened up by crosscuts from the shaft and when the ore is reached, the drive, or drift, is continued along the vein. As soon as the ore body has been delimited both in width and length, the back or roof of the drift is blasted down, the ore mucked out, timber put in place and regular stoping operations commenced. With these developments the use of electric power increases until it becomes associated, directly or indirectly, with most of the work at the mine.

One of the bigger groups of gold mines is located in the Porcupine area which was recently visited by Hydro News. About a dozen properties are in production in this district, but, with the time at our disposal, it was impossible to get around to all of them. So we confined ourselves to three in the near neighbourhood of Timmins which we were led to understand would be fairly representative of the industry as a whole with respect to the use of Hydro power and to standard modern practices.

Recreation For Everybody

The McIntyre Porcupine Mines Limited at Schumacher was our first port of call. Through the courtesy of M. L. Urquhart, the Assistant Manager, arrangements had been made for us to go under ground with the morning shift. On our way out, we stopped for breakfast at the Community Building which was built by the company at a cost of $500,000.

The approaches to the McIntyre Mine have been landscaped and terraced. In summer they present a very pleasing, gardenlike appearance. We found the tree-clad slopes, with the great shaft house towering at the top, attractive even in the grey light of a winter dawn. Adjoining the main shaft is a commodious building containing dressing rooms and baths for the miners and offices for the ore sampling and underground supervisory staffs. Here we were welcomed by N. D. Adams, the Assistant Mine Superintendent, to whom we were to be indebted for many privileges and courtesies accorded us on our tour underground.

When prospecting was first carried out,

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Errand of Mercy

A HYDRO doctor and Hydro nurses were first on the scene to render aid when a traffic accident occured recently on the Nipigon Highway while the facilities of the modern, fully equipped hospital at the Commission's Pine Portage construction camp, two miles from the scene of the accident were quickly made available in tending the injured who were rushed to the hospital in a Hydro ambulance.

Fifteen people were involved in the accident. Three were fatally injured.

When word of the accident was received at the camp, Dr. J. C. Pearson, the resident physician, and two nurses on his staff, Margaret Malcolm and Peggy Robertson, immediately rushed to the scene while another Hydro nurse, Miss L. M. Mutrie at the Cameron Falls colony, also responded to the emergency call as did Doctors W. W. Wigle and L. H. Burdett from Red Rock.

The hospital at Pine Portage is patterned after the standard type erected at all major Hydro developments in remote areas not served by civilian hospitals. The number of beds varies with the number of workers employed on the project, but each hospital is equipped with an operating room, emergency room and other auxiliary quarters. A resident doctor is in charge, assisted by graduate nurses and other trained technicians. On numerous occasions these hospitals and their trained personnel have proved their worth in providing prompt and efficient treatment not only for Hydro employees but also for others who were taken ill or were injured while far from regular sources of medical aid.



THIS ROTATING filter at Hollinger—one of many—sucks out the gold solution, leaving a cake which is sampled for residual moisture.

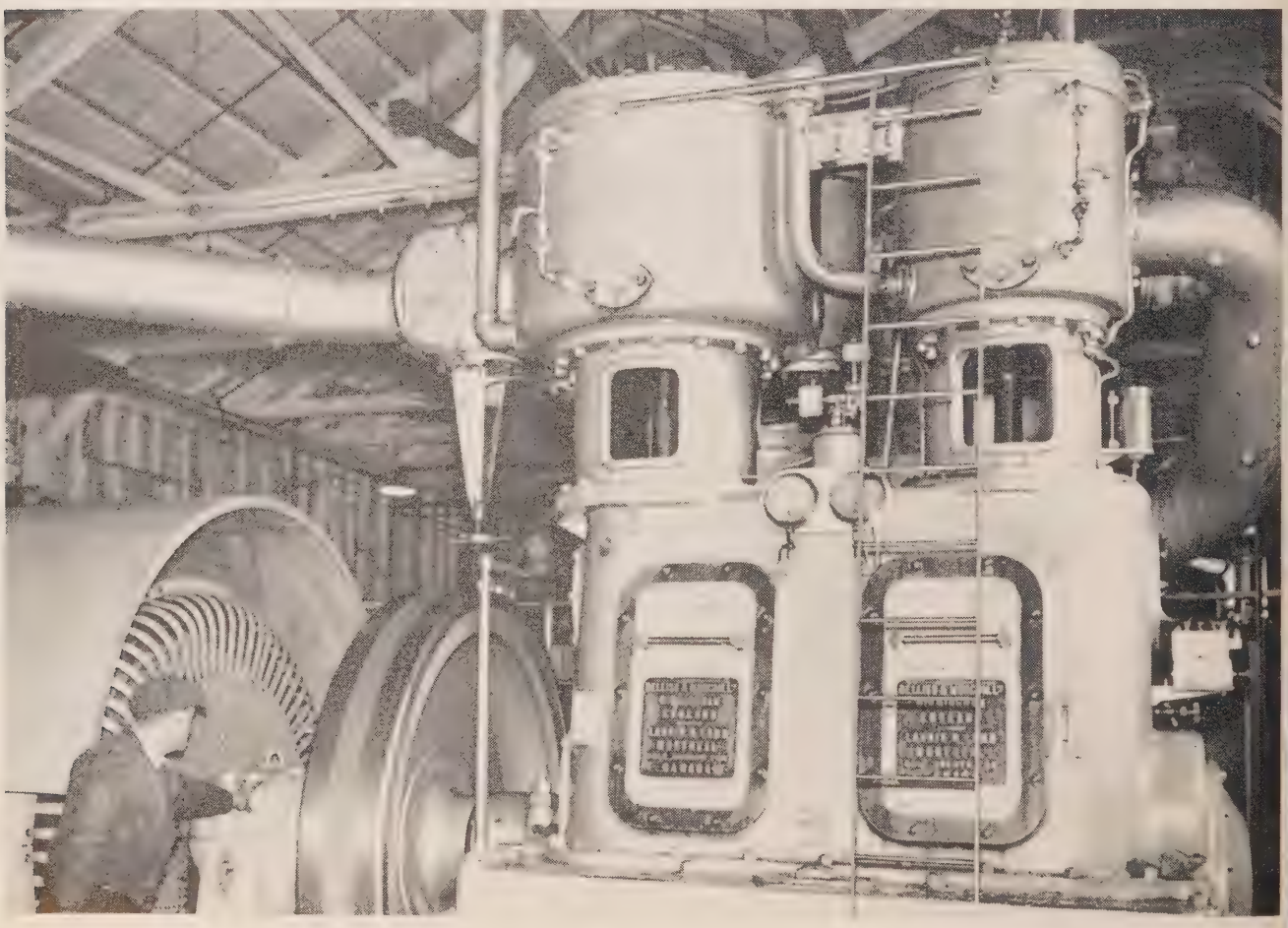


ABOVE—Mechanical mucker loading ore cars from a drift.



ABOVE — Every day is wash day at the Dome Mine. It's the "golden" rinse-off that counts!

BELOW—One of the air compressors at McIntyre. It is driven by a 600-horsepower electric motor.

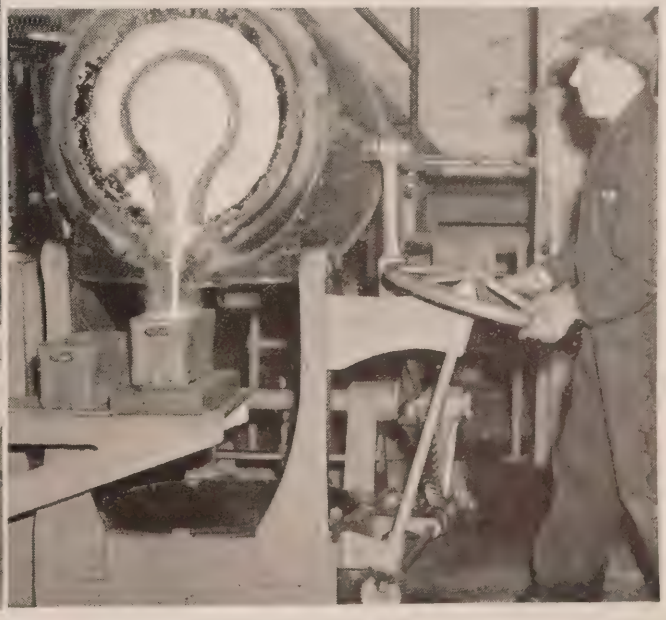


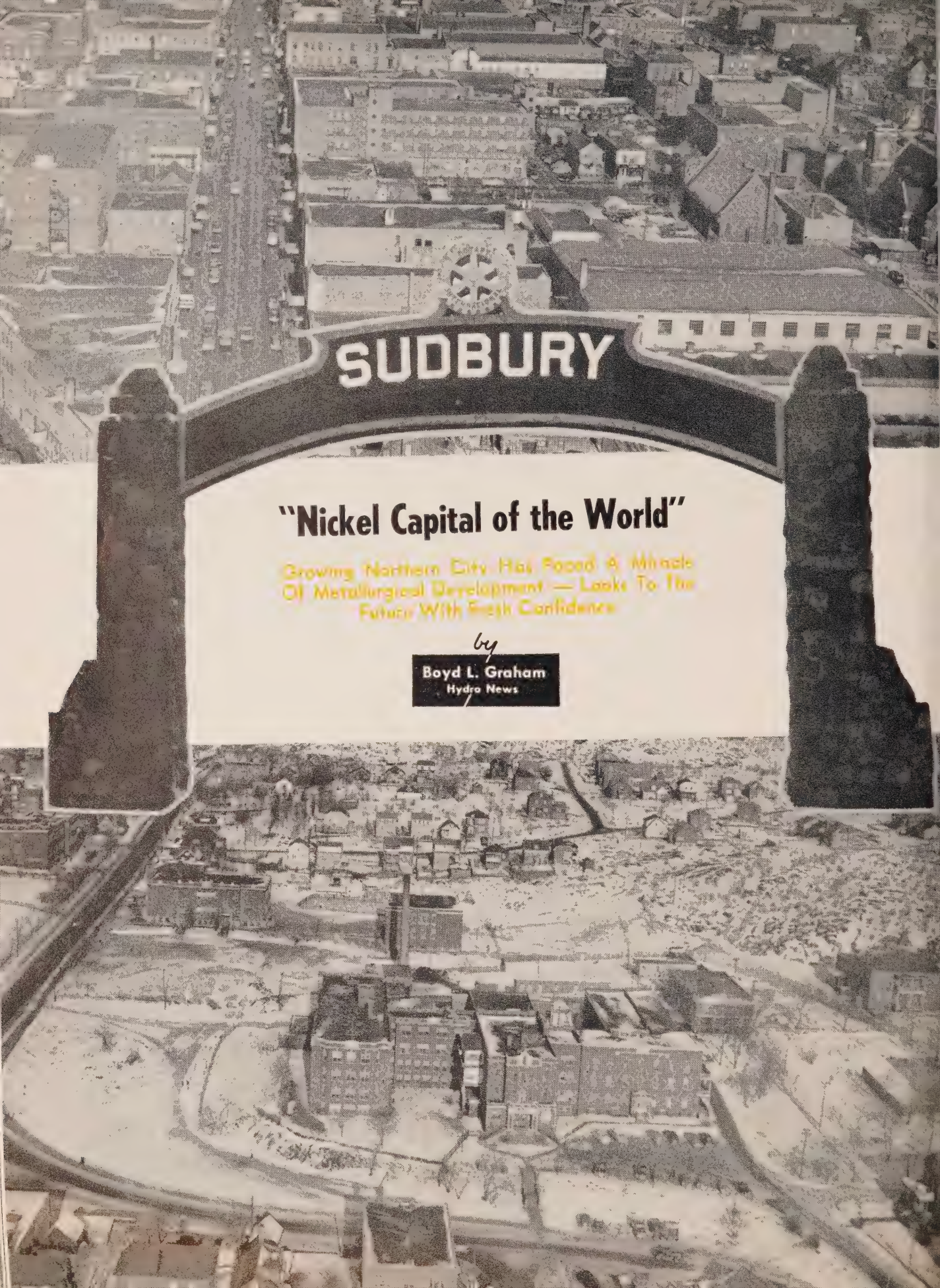


HOLLINGER'S AERIAL tramway, operated by Hydro power, brings sand and gravel from the company's pits to be used as backfill in the underground workings. The material is shared with McIntyre.

BELOW—A batch of "amalgam cakes" at the Dome Mine, ready for retorting. After retorting, the gold sponge is melted in a furnace (right) and poured into moulds. *(National Film Board Photographs).*







"Nickel Capital of the World"

Growing Northern City Has Faced A Miracle Of Metallurgical Development — Looks To The Future With Fresh Confidence

by

Boyd L. Graham
Hydro News

STRATEGICALLY situated in a vast basin of ore-bearing rock, the flourishing City of Sudbury, with a cosmopolitan population of 42,000, today ranks sixth among Ontario cities.

One could actually term it a by-product of that famous Canadian metal—Nickel! For the story of this bustling Hydro municipality — one of Northern Ontario's biggest power consumers, incidentally—is closely associated with one of the greatest metallurgical developments in this or any other generation.

It is probably no exaggeration to say that Sudbury's destiny was decided many centuries ago when Mother Nature prankishly changed the physiognomy of Northern Ontario, exposing what geologists call the pre-Cambrian Shield. Untold riches in the form of gold, silver and copper, as well as copper's important partner metal: nickel—come from those rocky hills which were heaved up long ages ago.

Great Destiny

But Nature's plans for Sudbury did not become apparent until the latter part of the 19th Century—around 1880, in fact—when the Canadian Pacific Railway began its march to the west. As construction crews were laying down the new line, it was noticed that outcroppings of rock in the surrounding hills had a peculiar reddish hue. Blasting operations, two miles from the struggling little construction town, unearthed the strange ore—believed to be copper at that time—which was destined to take its place among the most important metals of the world.

It was many years later, however, that it became famous under the name of nickel. After many unsuccessful attempts, a German refinery finally succeeded in separating the stubborn nickel-copper ore. They called the new metal "cupfernickel," meaning copper and a 'cussword' in German for "the devil himself" to signify its stout resistance to separation. Shortly afterward the English word "nickel" was derived.

Thus, as focal point for the production of approximately 90 percent of the world's supply of this metal—a component of over 5,000 articles of commerce—Sudbury lays justifiable claim to the title "Nickel Capital of the World."

Her intense civic pride is also bolstered by the distinction of being regarded as the largest source of refined copper in the British Empire while other valuable minerals, such as gold, tungsten, chromium, manganese, molybdenum, iron, platinum and uranium are all found in the immediate vicinity.

In fact it is the centre of one of the largest mining divisions in Ontario, stretching west from Mattawa to Blind River and north from Georgian Bay to James Bay. It is of more than passing interest to note that since the Mining Recorder's office was opened in May, 1906, some 60,000 claims have been filed in Sudbury.

But nickel holds a pre-eminent place in Sudbury's over-all economy for it is the centre of operations for The International Nickel Company of Canada, Limited, and the Falconbridge Nickel Mines Limited.

"Nickel is the basis of our population and the backbone of our city!" Sudburians will tell you, and one visit to this growing northern city is enough to convince even the most confirmed skeptic. Some people have even named it the "Three-Stack City." These three stacks are actually part of the big smelter of the International Nickel Company at Copper Cliff, four miles from Sudbury. But, visible from almost any point in the city, they symbolize its association with the great nickel industry.

Highest in the British Empire and second highest in the world, these stacks send up great plumes of smoke 24 hours a day and seven days a week, for the nickel mines, the smelters and refineries never stop operations for a moment. When two-thirds of the men are at home, the other third is at work.

If you are "from Missouri" just watch the sky at night when it reflects the red-hot glare of the slag as it comes from the smelters. "Slag-dumping" is a colourful spectacle which is repeated at 20-minute intervals with ceaseless regularity.

But, of course, nickel does not constitute the only form of industrial activity in Sudbury. The city has an impressive and growing list of other industries including a creosoting firm; a brewing and malting company; an iron foundry and a steel construction company, while a diamond drilling firm is another leading industry.

Sudbury has also gained fame as a centre for the manufacture of skis which are shipped out in large quantities to

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SUDBURY COMMISSION AIDS CIVIC CENTRE

Permission was granted recently by the Sudbury Hydro-Electric Commission for the Civic Centre Committee to canvass householders for contributions through their mailing list. The Commission also approved a monthly contribution scheme which will involve addition of $1 a month to Hydro bills of subscribers wishing to use this method of contributing to the proposed civic centre.

SUDBURY MANAGER HAS LONG-SERVICE RECORD

PROBABLY FEW PUBLIC servants can better the proud record of REGINALD H. (REX) MARTINDALE who has administered Sudbury's hydro system for the past 47 years and the city waterworks for 41 years.

Born in Alliston in 1880, Rex Martindale arrived in Sudbury on March 22, 1902, to take over the managership of the light and water services. He has held this position continuously since that time and for the past 14 years has been Manager-Secretary-Treasurer of the Sudbury Hydro-Electric Commission which was formed and took office on January 1, 1936.

Mr. Martindale was educated in Alliston and has been a member of the Association of Professional Engineers since 1923. In addition, he has been a Director of the A.M.E.U. for several years also serving as a Trustee of the Canadian Section of the American Waterworks Association as well as Chairman of Canadian Waterworks Association for the past year. He has also taken a keen interest in the activities of the Sudbury Rotary Club and the Masonic Order, being a member of both organizations.

Indicative of the esteem in which he is held in Sudbury, the genial manager-secretary, a few years ago, was honoured by the city council which passed a bylaw naming a thoroughfare after him. The street lying on the extreme western boundary of the city, formerly known as Long Lake Road, now bears the name: Martindale Road. Also at a civic luncheon in 1942, at which the City Council and all civic officials were present, Mr. Martin-



R. H. Martindale

dale was presented by the City Council with a splendid gold watch, suitably engraved, in recognition of 40 years' successful service with the city.

A prominent member of St. Andrew's United Church in the Nickel City, Mr. Martindale has served on several church boards and as a choir member. Other special interests include fishing, hunting, hockey and gardening. He is married, with two sons and two daughters.



SUDBURY COMMISSION'S new warehouse has facilitated handling and storage of large quantities of valuable equipment and replacement parts. The fleet of seven trucks, shown in the foreground, helps maintain service to a growing list of consumers.



IN THE meter stockroom at Sudbury Commission's new warehouse, Cliff Wilson examines some of the meters stored there prior to installation in homes throughout the city.



ADMINISTRATIVE COSTS have been greatly reduced by the use of combined electric and water accounts. Billing machines in this photo are operated by left to right, Mrs. Jean Maki, Mrs. Irene Donegan and Mrs. Burleigh Martin.



IN THIS photograph, three members of the administrative staff are shown at work. They are, left to right, Miss A. Acquin, senior lady clerk who has 30 years' service to her credit; Harry Simpson, Assistant Accountant and Marguerite Chaput, Clerk.



EACH METER is thoroughly checked before it is placed in service. Sam Pitt and Sam Clark are shown in the testing room at the Sudbury warehouse giving several meters a five-year check.

SUDBURY

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many parts of Canada and the United States as well as several European countries. Then, too, bottling works, bakeries, dairies, builders' supply firms, flour and feed mills, wholesale and packing houses and several other large commercial establishments distribute their products to the urban as well as to the large suburban population. This suburban population is found largely in the "company towns" maintained by the two nickel companies, all within a radius of five to 25 miles.

Suburban Population

These "company towns" include Frood, Creighton, Garson, Levack, Falconbridge, Copper Cliff and Coniston. Other thickly-populated suburban areas are also linked to the city by paved roads, while Sudbury's location on the main transcontinental line of the C.P.R. and its connection with one of the main lines of the C.N.R. is an important advantage. Thus, this busy city, with its numerous business establishments and well-organized services is the commercial and social centre for an estimated population of at least 70,000 people.

This fact is illustrated by bank clearings for 1948 which totaled $128,147,012, while further evidence is provided by the business assessment figures which have tripled since 1930. Speaking of taxes, collections reached an all-time high in 1948 when property owners paid $1,380,522 or $202,835 more than in 1947. By December 31 last year, approximately 96 percent of the annual levy had been collected.

Sudbury's growth in size and population since it first became a town in 1893—56 years ago—has been steady, with very few setbacks, a record which is attributable, in many instances, to the progressive spirit of its citizens. Again we must turn to statistics to prove our point! For example, since the first Parks Commission was formed in 1917, five new parks have been opened up to serve the growing population, while recreation facilities have been expanded to three times their original size.

Speaking of recreation, one of the city's main projects at the moment is the campaign to build a $1,200,000 civic centre. This new centre will augment facilities for many types of sport, in addition to fulfilling several other important functions. In the realm of sport, curling enthusiasts—and there are many in Sudbury—enjoyed the facilities of the newly-built Granite Club for the first time during the 1948-1949 winter season.

Education is provided by eight public schools, 10 separate schools, a mining and technical school, a high school, and one college, as well as trades schools and business colleges. Boasting a membership of over 8,000, the public library with more than 20,000 volumes on its shelves, has a yearly circulation exceeding 156,000. Proving the point that Sudbury has a cosmopolitan population is the fact that the city's three newspapers are published in English, French and Finnish. The largest—the Sudbury Star—is a flourishing English-language daily with a Canadian wide reputation, while the French and Finnish weeklies—*L'Ami du Peuple* and *Vapaus* enjoy a wide circulation among their respective national groups.

Approximately 80 percent of the 76 miles of streets in Sudbury are hard surface. This is equivalent to 60 miles or the distance between Sudbury and Sturgeon Falls. Sudbury's waterworks system includes approximately 43 miles of water mains.

Statistics do not tell the whole story of this unique city, however. One of the many points of interest in Sudbury is the grotto and statue of the Virgin Mary which overlooks that section of the city bordering on picturesque Lake Ramsay. Bearing the Latin inscription "Regina Caelorum"—"Queen of the Heavens"—the statue was brought to Sudbury by Count Romanet du Caillaud who lived there until 1914 when he returned to his estates in France where his wife—a Spanish princess—and two sons still lived.

Lake Ramsay itself is a great scenic asset to Sudbury in addition to providing a base for two air services and a flying school. Here, also, is located an important

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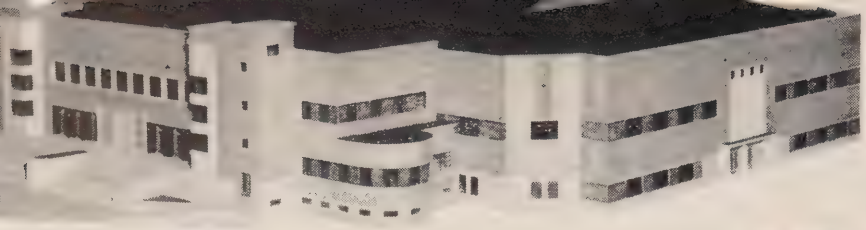


SUDBURY OBTAINED its first supply of power from this steam generating station established in the early days when it was only a struggling hamlet.

•

PURCHASE OF a 28-foot aerial ladder last year was an important step in streamlining several operations of the Sudbury Commission's line department. Now linemen can work in perfect safety and at ease around power-laden conductors in the heaviest traffic.





SHIRLEY SHEA and Ken Dobson, radio announcers, prepare to go on the air at the Nickel City's English-language station, CKSO. The other station, CKNO, is bilingual.

ARCHITECT'S MODEL of the proposed Civic Centre which will be built in Sudbury at a cost of $1,200,000.



ANOTHER ISSUE of the Sudbury Daily Star is being "locked up" in the modern composing room. The city has three newspapers, each published in a different language.



LOWER CENTRE — Nickel is not the only thing produced in Sudbury. Here one of the city's junior citizens examines a set of new skis at a local plant which does a thriving export business in this line.



DURING 1948, permits issued in Sudbury represented building valued at over $3,000,000. The new block, shown below, is an example of the fine type of construction which took place during the past year.

SUDBURY'S CONVENIENT location on the main lines of the C.P.R. and C.N.R. is an undisputed advantage which has contributed greatly to its steady growth during the past half-century.





SUDBURY

(Continued from Page 13)

weather bureau of the Department of Transport's Meteorological Division which gathers weather data and furnishes forecasts for the surrounding area. Then, too, hundreds of summer camps and permanent homes—most of them owned by Sudburians—line the wooded shores of this beautiful lake, which offers a convenient respite from the city's bustle during the summer months. Overlooking one end of the lake, the new Sudbury General Hospital is rapidly nearing completion. Enlargement of the city's hospital facilities will be of a great benefit to the district as a whole which has been previously served by St. Joseph's Hospital—the only large general hospital within a wide radius.

Electrical Power

But, perhaps, one of the most interesting facts about Sudbury is the part electrical power has played in its development.

Claiming the distinction of being one of the first Ontario cities to have its own electric plant, Sudbury first drew power from a steam generating station established there in 1895. A new power supply was obtained from the Cochrane-McVittie interests on the Wahnapitae River to serve the growing community in 1905. Four years later, the first street lighting system (operating on the arc light principle) was installed. Today, Sudbury claims the added distinction of having the largest installation of ornamental lighting in Canada.

Significant progress was achieved in improving electrical service between 1920 and 1941. In 1934, four years after Sudbury became a city with a population of 20,000, the first power contract was made with The Hydro-Electric Power Commission of Ontario.

The first Sudbury Hydro-Electric Commission, composed of J. A. Laberge as Chairman with Mayor W. J. Cullen and J. D. McInnes as Commissioners, was elected in December, 1935, and took over administration of the municipal hydro-electric system from the city council on January 1, 1936. In making this change, the city also handed over operation of the waterworks system to the local commission.

At that time, Sudbury's total load was only 4,704 horsepower—a figure which has grown rapidly in the interim. In January this year—even with restrictions in effect—the Nickel City set a new record when the peak load reached 15,038 horsepower. In the corresponding month a year ago, the city's peak load was 14,335 horsepower.

Continuous Increase

A continuous increase in the number of consumers during the past year explains the reason for Sudbury's new record in power consumption. For example, during 1948, a total of 524 building permits were issued, totalling over $3,000,000 and including housing accommodation for 230 families.

At the end of 1948, the Sudbury Commission was serving 10,737 consumers, of whom 9,347 were domestic, 1,249 commercial, and 141 industrial. Since then approximately 65 new consumers have been added. Power is distributed over 55 miles of line from two substations: No. 1 built in 1926 and No. 2 built in 1941. Another building of which the local commission is proud is the large warehouse situated adjacent to No. 2 substation. This structure, completed two years ago, is equipped with a 7½-ton crane on overhead tracks to facilitate handling of large transformers and other heavy equipment. It contains the meter department, where meters are tested and repaired. Many thousands of dollars' worth of stock and supplies, are also housed in this modern building.

Financially, the Sudbury Commission is in an extremely sound position. In 1935, when the first Commission took office, the total debenture debt was over $215,000. During the intervening years, as a result of careful administration, this debt has been cut to less than $31,500, while total assets are valued at well over $1,600,000, as compared with approximately $497,000 in 1935.

An efficient staff of 50 people handle the varied operations of the Sudbury system, while a fleet of seven trucks assists in maintaining the commission's record of service to this busy municipality. A great saving in administrative costs has been effected by using combined electric and water account forms. This has been facilitated by the adoption of a compact meter book sheet which provides the billing clerks with information on electric meter readings, flat rate water heater rates, mini-

(Continued on Page 24)

MAYOR OF SUDBURY FOR NINTH YEAR

MAYOR W. S. BEATON has been Sudbury's chief magistrate successively for the past nine years. Born in the Township of East Gwillimbury, near Toronto, he was educated in North Bay where his father conducted a contracting business. Besides his onerous municipal duties, Mayor Beaton is engaged in the insurance business in the Nickel City and holds a Chartered Life Underwriter Degree. Prior to his election as Mayor, he served two years as a parks commissioner and three years on the city council.

As Mayor, he is automatically a member of the Sudbury Hydro-Electric Commission on which he has also served for the past nine years, one year as Chairman. Past President of the Ontario Municipal Association, Mayor Beaton is a Regional Chairman of the Canadian Federation of Mayors and Municipalities for Northern Ontario. Interested in all sports, he is an active member of the Sudbury Canoe Club. Married, he has one son and four daughters.



Mayor Beaton

LAWYER-COMMISSIONER

LEO A. LANDREVILLE is the junior member of the Sudbury Hydro-Electric Commission. A lawyer by profession, he was born in Ottawa and educated at the University of Ottawa and Dalhousie University, Nova Scotia, where he graduated with Bachelor of Arts and Bachelor of Law degrees respectively.

Active in public affairs since he came to Sudbury a few years ago, Commissioner Landreville was a city alderman for three successive terms, one as Deputy-Mayor. He is also a member of the Sudbury Kinsmen and Richelieu Clubs. Married, he has one son and one daughter.



Leo A. Landreville

Hired



HAYMAKING IS reported to be no longer a gamble with a "haymaker." A ventilating fan at the base of the haymaker provides for rapid passage of a large volume of air through the hay.

This Year Promises To Be "BIGGEST YET" In History Of Hydro's Rural Expansion Program — Plans Call For Building Of Over 5,300 Miles Of New Line To Provide Service For 42,820 New Rural Consumers In Ontario

by

C. G. W. MacIntosh
Hydro News

HYDRO is the farmer's "hired man" —the tireless, ever-working friend of countless hundreds of people who live in Ontario's rich and bountiful rural sections.

That, in substance, was the pronouncement of numerous farmers who were interviewed by Hydro News during a recent tour of Rural Operating Areas.

Take Gilbert Snider, for example, a typical farmer in the Kitchener area who operates a mixed farm. In his judgment, Hydro on the farm has eased many farm tasks and reduced the hours of work.

Electrification is not new on the Snider farm. Mr. Snider's father, who founded the original homestead, had electricity installed in 1917.

With the advent of Hydro, life became more attractive on the farm for the whole family, and for the first time they enjoyed most of the advantages and comforts of a city home, while many farm operations were speeded up by the installation of electrically-operated equipment.

This story can be duplicated many times in areas where Hydro has been introduced. In the words of many farmers it has provided an extra hired man.

New Equipment

THIS fact has become increasingly apparent each year since rural electrification was undertaken on a general scale. For the expansion of rural Hydro service in Ontario has been matched by a corresponding advance in the development of many important electrical devices designed to assist the farmer and his wife in their work. Such equipment as milking machines, electrically-operated water pumps, milk coolers, grain grinders, brooders, grain blowers, etc., today are virtually standard apparatus.

The housewife, too, has come to enjoy many worthwhile conveniences. Many farms, today, have electric refrigerators, electric stoves, electric washing machines, radios, irons and other pieces of domestic equipment to make housework easier.

The task of running a big farm is being further lightened by other electrically-operated machines which are being introduced each year. One comparatively recent development is the barn-cleaner for use in dairy barns.

A popular type of barn-cleaning apparatus consists of a series of upright paddles, attached to a belt-type chain or sprocket — driven by an electric motor — which pulls the paddles along the gutter behind the stalls. The paddles push the litter ahead of them to an inclined conveyor which, in turn, carries the litter to a waggon or other receptacle outside the barn.

The hay-curer or drier is another interesting device which is becoming increasingly popular. Farmers who have installed hay-curing systems in their barns maintain that they get high-quality hay, which is greener, leafier, and has more food value than field-dried hay. This plan eliminates the possibility of farmers losing hay because of unfavourable weather conditions, and tends to reduce the danger of fire from spontaneous combustion.

This method of curing hay involves putting partially cured hay into the barn. The curing is completed by forcing air through the hay from a system of air ducts connected to an electric blower. Long, chopped or baled hay can be cured by barn hay-curing systems, it is pointed out.

Haymaker

Another common method of curing is to store hay, soon after it is cut, in a silo-like structure called a "haymaker." The hay can be placed in the haymaker even though the moisture content is as high as 45 percent. The operation of the fan reduces the moisture content to 20 percent or less for safe storage without moulding or spoilage. "Sweating" is thus prevented by proper circulation of air through the hay and the curing process can be completed in safety.

Equipment in a "haymaker" includes an electrically-driven ventillating fan, mounted either over the entry door or around the base of the structure, which provides for rapid passage of a large

man



RIGHT: Paying out line to string the poles is Robert Edwards of Chatsworth. In foreground are seen reeling cable and reel stands.

BELOW: Erecting poles by hand is a job that takes seven men. Bert Allan, foreman, from Orangeville, is seen at the extreme left directing a pole erecting crew.



volume of air through the hay. In one type of haymaker, the fan is installed to pass fresh air through the hay and out through an exhaust device. Another common method is the induction of air by means of a fan which forces it through the hay and out the top of the silo or haymaker. Circulating air is said to cool and dry the hay quickly.

Through this process, it is stated, the hay retains a fresh, green colour and much of its food value. It is also reported that cows fed on this processed hay give more and better milk.

Musical Milking

Speaking of milk production, farmers can't explain it, but they claim that "music hath charms" for cows. They stoutly insist that radio music, whether it is symphony or just "swing," makes cows more contented.

Mrs. Archie Caya, who was brought up on a farm in Lambton County near Sarnia, and who now with her husband, operates a dairy farm in Waterloo Township near Kitchener and Waterloo, states emphatically that cows seem to be pacified and provide more milk when a radio is playing music in the barn at milking time.

Thus, in many modern dairy barns today, visitors will find electric radio receiving sets carrying musical programs of an infinite variety to suit the moods and tastes of the farmer (and his herd!).

While many farmers in the older, more densely populated rural areas of Ontario have enjoyed the advantages of Hydro service for several years, farmers in other areas are at present experiencing the boon of Hydro for the first time.

The history of rural electrification, goes back many years to the time when small, isolated groups of farmers, whose properties were located adjacent to urban centres were able to make arrangements with nearby municipalities for connection with their Hydro systems.

As more and more farmers and other rural residents came to realize the advantages inherent in electrification, the demands for service reached a point where municipal systems found it inadvisable to continue extension of their lines beyond the corporation boundaries.

Thus, in 1921, the Commission began its active rural program. Prior to that time, fewer than 3,000 rural consumers were being served. However, within ten years after the program had been initiated, the number of consumers had reached 55,000.

During the war years, rural line construction dropped to a low ebb because of the scarcity of manpower and materials. Naturally, construction, including rural, had to be curtailed to a minimum during this period. The low point was reached in 1943 when only 21 miles of new line were built and 2,005 new consumers connected. The upward movement started in 1944 when the number of miles of new line was 350, with 8,054 new consumers being added. With the end of hostilities in 1945, Hydro renewed its rural program on a larger scale and 3,327 miles were constructed in the three years through to the end of 1947. But the work was still seriously hampered by shortages of materials and it was not until 1948 that rural construction hit its real stride.

Increased Load

Another feature of the post-war years has been the astonishing increase in rural load. At the end of 1945 the Commission was supplying 111,255 horsepower to its rural consumers. By the end of 1948 this figure had soared to 123,144 horsepower.

This increase in the rural load is partly attributable to the fact that farmers and other rural residents, in ever-increasing numbers, have become aware of the advantages of using low-cost power.

In this connection, it is interesting to note that although the use of electricity on the farm has multiplied over the years its cost to the farmer has steadily decreased in the face of increased operational and other costs. For example in 1928, the farmer paid an average rate of more than five cents per kilowatt-hour. His average power consumption in that year amounted to 96 kilowatt-hours a month and his average monthly bill was $4.97. During 1948, the farmer paid an average of 1.63 cents per kilowatt-hour. His average monhly bill was only $3.95 in spite of the fact that his average monthly consumption had increased to 243 kilowatt-hours. However, it is unanimously agreed that increasing costs of labour and materials will ultimately increase the cost of



1



1. "MUSIC HATH charms" for cows, dairy farmers claim. Rudy Frank is shown turning on the radio in the dairy barn as he prepares to use the milking machine.

2. HOURS OF laborious work are eliminated for farmers who have grain blowers to assist them in storing grain. This one is being operated by Rudy Frank on the Caya farm in Kitchener-Waterloo area.

2



3. A BALE elevator for storing hay makes the operation easy. Emanuel Heintz is shown operating the machine on the Caya farm.

4 & 5. HOOKING BLOCKS on a transformer prior to raising it to the top of the pole are Bob Yoeman, and Stewart Barfoot, of the Owen Sound R.O.A. construction crew. Ted Gougeon (No. 5) of Owen Sound is seen connecting up the transformer at the top of a pole.

power to consumers in order to permit the Commission to maintain its fine record of service on a sound financial basis.

Accelerated Program

Mention of Hydro's record of service emphasizes the fact that this promises to be the biggest year yet in the history of rural expansion with an impressive construction program already under way. The revised program to the end of December of this year calls for the building of over 5,300 miles of new line and giving service to 42,820 new consumers. By July 29 this year, Hydro had erected 2,903 miles and added 26,119 consumers since the beginning of the fiscal year, November 1, 1948, bringing the total number of miles of line to 30,224 while rural consumers totalled 246,208.

As in most outdoor construction, the greatest progress with the rural program is made during the late spring, summer and early fall. But that does not mean that there is no activity in the winter months. In January of this year, for example, Hydro's Construction Division built 275 miles of rural line which brought electricity to 1,800 consumers on farms and in hamlets. This figure compares favourably with the total for the month of May when 295 miles were erected and 2,875 consumers connected.

Planning Required

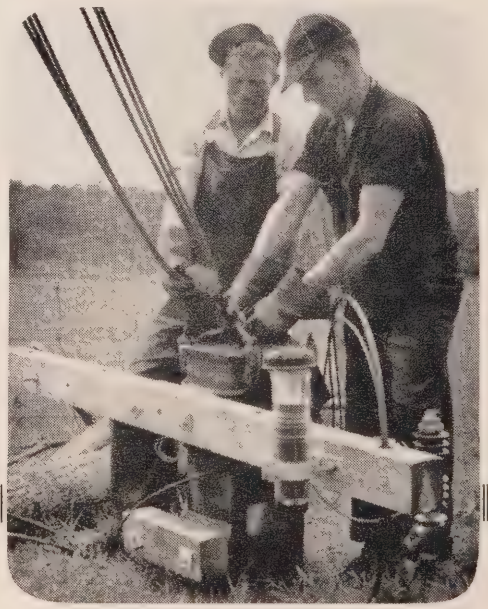
Construction of rural lines requires considerable study, planning, engineering skill, and in the early days of Hydro often necessitated some "selling" to get the required number of consumers per mile.

After an application for service has been received and there is a sufficient number of consumers per mile, a map is prepared at the Rural Operating Area office showing the location of the consumers, the proposed route of the line,

3



4





and the condition of the terrain. This map is submitted to Hydro's Head Office where it is checked by the Engineering Department for preparation of estimates.

A distribution engineer is sent out to check the proposed route and to decide whether the line should follow the road or should be placed on private property. In cases where the road may be unusually crooked, requiring excessive guying of poles, or where there are a great number of trees, necessitating heavy tree-trimming, a private right-of-way usually is selected. This reduces construction costs and provides more reliable service free from interruptions due to tree contacts in wind and sleet storms. Arrangements have to be made with the farmers to erect poles on their property if a private right-of-way is chosen. Permits must be obtained if railway lines have to be crossed.

Scheduling of all rural extensions or new construction, in each Rural Operating Area, is based on the date on which applications are made by prospective new consumers.

Owen Sound Area

A typical example of this year's program can be found in the Owen Sound area, where Hydro News watched rural lines being built and power being "piped" into the farms. It is a real thrill for the farmer. Usually, farmers will take as much time off from their work as possible to watch, step by step, the erection of poles, the stringing of lines, the wiring of their farms, and the connection of their farms to the main distribution line by Hydro crews.

Thus, Hydro is continuing to fill the role of the tireless, low cost hired man by helping to bring "push button" farming closer to reality and by gradually eliminating dawn-to-dusk work hours.

6. HOOKING UP the meter is an interesting operation. Here Robert Bray and his son, Clifford, look on as Stewart Barfoot of Owen Sound completes the job.

7



7. CREAM, MILK, butter and other perishable foods are kept under ideal conditions on farms where there is an electric refrigerator.

8



8. SEWING IS simplified with an electric sewing machine. Mrs. Archie Caya of Waterloo Township, is shown operating the machine.

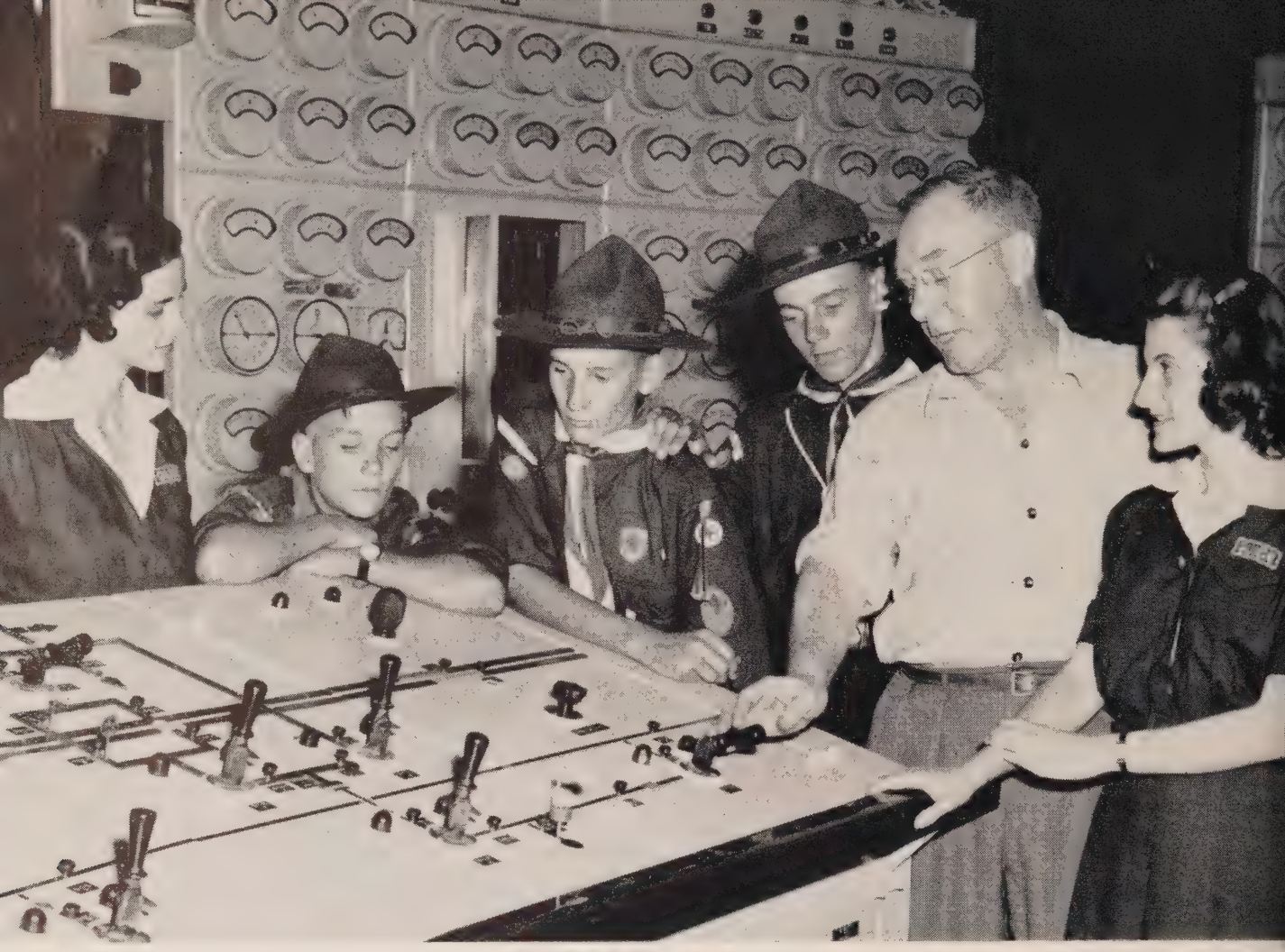
9. IRONING IS just another of many farm household tasks which are now easy and pleasant with Hydro on the job.

6



9





KEEN INTEREST was displayed by Scouts, of the 1st Geraldton Ontario Troop, in Hydro's power plants in the Niagara Region. In this picture, taken in the control room at the Queenston plant, they are seen literally hanging on every word of Operator Jack Yorke. The scouts are, left to right, Dick Thompson, Mike Bewcyk and Carl Torgerson. With them are two of the plant guides, Janet Webster, left, and Tanis Kell, extreme right.

ONE-DAY "PATROL"

IF badges are being awarded for getting the most out of a one-day "patrol" five scouts of the 1st Geraldton Ontario Troop qualify with top honours.

These lads, two of them King's Scouts, attended the jamboree at Ottawa and, before returning home, expressed a wish to see the famous Queenston-Chippawa development and other Hydro plants. Their wish was readily granted and, making the most of their opportunity, the boys saw in one day more than the average person could see in a good three-day intinerary.

The weatherman co-operated in providing sunny, warm weather for the trip to the Niagara Region. The Scouts were young dynamos of energy. They bubbled over with enthusiasm at the sights they were seeing for the first time. One lad, King's Scout Joe Bulger, had never seen a large boat before. When the small party arrived at Lock No. 3 on the Welland Ship Canal near Homer, a freighter from the Netherlands was being locked through. Scout Bulger and the others were quite happy and thrilled to see an ocean-going vessel and eagerly took pictures of the ship.

As they approached historic Queenston Heights the scouts displayed keen interest in the towering monument to General Sir Isaac Brock, one of the principal landmarks of the area. They also read with interest the inscription on the small monument to Laura Secord, heroine of the War of 1812-14. The scouts plied their guide with questions about the battlegrounds of this historical Canadian spot. They marvelled at the view of the beautiful lower Niagara River winding its way down to Lake Ontario, as seen from Queenston Heights.

The big moment for the scouts came when they arrived to inspect the impressive Queenston Power Plant. The eagerness with which they followed the courteous, efficient young ladies, who act as guides in the plant, their many intelligent questions and keen interest in the equipment and all phases of operation of the plant, were most refreshing.

The lads were fascinated by the view as they gazed down on the plant from the top of the cliff and saw the Niagara River flowing some 315 feet below them. The power canal delivering water into the big forebay behind the screenhouse of the plant, was also a source of interest to the scouts.

They were keen to pack as much sightseeing into their one-day tour as possible.

(Continued on Page 32)

by
C. G. W. MacIntosh
Hydro News



ONE OF the efficient plant guides, Miss Janet Webster, (left) is explaining the function of a turbine runner to two of the scouts at the Queenston plant. They are King's Scout Joe Bulger, left, and 1st Class Scout Dave McLaren, who is also a patrol leader.

EQUIPMENT OF the Queenston generating station (centre) had more than passing interest for the scouts, some of whom are interested in engineering. Listening to Guide Janet Webster explain the purpose of a governor are Joe Bulger, left, Mike Bewcyk, Dave McLaren and Dick Thompson.

NIAGARA'S GIANT whirlpool (bottom left) proved an awe-inspiring sight for the scouts. They obtained an excellent view of the swirling, treacherous pool and the river rapids from the Whirlpool Aero Car. The lads can be seen at the front of the car to the right.

IT WAS "Bon Voyage" indeed for the five scouts when they boarded the tiny Niagara River steamer, "Maid of the Mist", (bottom right) for a trip up the river and a close inspection of the American and Horseshoe Falls thundering down into the Gorge. The spray from the cataracts proved refreshing on an extremely hot day. Seen aboard the vessel are, left to right, Dave McLaren, Dick Thompson, Joe Bulger, Carl Torgerson and Mike Bewcyk.

20,000 MEALS A DAY

by Edith Kent







SHOWN HERE is a portion of the four tons of meat which form part of the 20,000 meals served daily in construction and line camps by Hydro's catering staff. Meat kept in cold storage (above), is prepared (left).

TAKE four tons of meat, 800 pounds of shortening, 3,000 pounds of sugar, 600 dozen eggs; add 140 bags of potatoes, 2½ tons of other vegetables, 60 bags of flour and the milk from 260 cows.

These are among the ingredients used in preparing 20,000 meals a day for workers at Hydro construction and line camps throughout the province.

A catering staff of 650 employees is engaged in the preparation and serving of these meals which, during the year 1948, totalled approximately 5½ millions. This year, it is estimated that something in excess of 6,000,000 meals will be served in Hydro construction camps.

Quality and Variety

Quality and variety in food, as any dietitian will testify, are almost as important as quantity, and in these essentials Hydro's meal-planners have proved their ingenuity and wisdom. Taking into account all the varying tastes of the 7,500-odd men the Commission feeds, they still manage to serve three or four appetizing meals a day.

Food demands vary with the type of job of the men concerned. A man in an office, for example, or a driller working amid dynamite fumes and rock dust, will incline towards light meals including quantities of fruit and salads, whereas the fresh-air worker wants steaks, chops, and heavier desserts.

National tastes influence meals, too. Italians are fond of macaroni dishes and oil dressings; Russians and Poles are heavy meat eaters; French Canadians demand pea soup, baked beans, pancakes and syrup, and any kind of pie; and a Scandinavian would like fish three or four times a week. The New Canadians, on the other hand, eat anything—so long as there's lots of it.

Total consumption of food per day amounts to a little less than 45,000 pounds, or an average of 6.63 pounds per man. A typical Thursday menu would run something like this. Breakfast: tomato juice, stewed prunes, assorted dry cereals, porridge, bacon and eggs, fried potatoes, toast, butter, jam, coffee, tea and milk. Dinner: vegetable soup, pot roast of beef with vegetable gravy, cold roast pork, lima beans, mashed potatoes, apple pie, blancmange pudding, assorted cakes, bread and butter, soda biscuits, coffee, tea and milk. Supper: vegetable soup, grilled steaks, cold ham, oven browned potatoes, fried onions, coleslaw, apple pie and cheese, canned peaches with cake, bread and butter, coffee, tea and milk.

To serve such quantities and such varieties of food with a minimum of waste and at an average cost per meal, today, of 38 cents (for the rations alone), necessitates a maximum of care and control. One of the main factors in the elimination of waste is the adoption of cafeteria-style service instead of the older-type "dish-up" style. Steam tables and refrigeration in use at Hydro's cafeterias keep hot things hot and cold things cold, thus rendering every ounce of prepared food appetizing and attractive.

Seat 600 Men

According to the size and nature of the construction camp, Hydro's dining-halls are of two main types—a larger, semi-permanent building, such as had been erected at Des Joachims, and a smaller short-term one, in either canvas or sectional buildings such as is used for line construction. Designed to seat 600 men, the larger type has a kitchen with a double serving counter; the smaller dining-rooms seat up to 100 men and operate on the dish-up principle. Total area in each case allows about 14 square feet per person.

With an eye to increased efficiency as well as to elimination of waste, the Commission has installed the latest labour-saving equipment in its kitchens wherever possible. Motor-driven dough mixers and modern eelctric ovens take the guess work out of baking in the large camps. Designed by the Hydro engineers, and built to order, these ovens operate at 550 volts, with two decks separately controlled.

Crunchy breakfast toast is turned out electrically at the rate of 12 slices a minute, and mechanical potato peelers take the drudgery out of one of the traditional KP routine tasks. Salads are kept crisp on refrigerated counters, and meat and other perishable foods are placed and kept in cold storage until actually needed. Even dishwashing is performed electrically, with machines that wash and sterilize 4,000 pieces of tableware an hour.

Workers Specially Selected

In its personnel as well as its machinery, Hydro insists on the highest standards. Cafeteria and kitchen workers are specially selected and trained to give courteous, efficient service, and in return are provided with the best in working and living quarters. In this connection the staff of trained women who are employed as waitresses have been doing an efficient job in maintaining the highest standards of cleanliness and general morale. Pleasant surroundings, Hydro feels, are essential to high morale, which in turn makes for greater efficiency. This policy has been found to pay off, in that labour turnover has decreased markedly as accommodation has improved.

In fact, the wisdom and foresight of those responsible for Hydro's cafeterias has been demonstrated in all aspects of food preparation and service. From the first sod turned for the cafeteria building, and the first order placed for supplies, to the last "gulp" of coffee, Hydro's catering service has established itself as one of the biggest and most efficient of its kind in Canada.



LEFT — BROTHERS of the skillet at one of Hydro's big construction camps are important factors in maintaining morale at these establishments. Over six million meals will be provided by the catering service this year.

COMMEND FIRE DEPARTMENT

Members of Chatham Public Utilities Commission recently commended the local fire department for its quick action in controlling a fire in the basement of the high tension transformer station in Chatham. Called to the scene, the department quickly brought the flames under control, thus averting a very serious situation.

HYDRO CREW FIGHTS FIRE

Twenty hydro workers aided in fighting a bush fire in the Peterboro County Forest, 20 miles northeast of Peterboro recently. Caretaker of the forest sought aid from A. Flynn, Hydro Superintendent at Norwood.

SUDBURY

(Continued from Page 15)

mum bill, water meter readings and flat rate water charges. A colour scheme to distinguish the three classes of power consumers is also used in preparing hydro-electric accounts. Another achievement of this progressive commission has been the introduction of a special form of arrears notice which has won considerable approval and has been adopted by several other cities and towns. In fact, Sudbury's methods of collection have proved to be highly efficient. Bad debt accumulations, over several years, are less than one-eighth of one percent of the gross annual revenue.

Capable Manager

While all the credit for these accomplishments cannot be attributed to a single individual, it is not unreasonable to award a share of the honours to Sudbury's capable Manager-Secretary, Reginald (Rex) Martindale.

"Rex" arrived in Sudbury on a bleak March morning 47 years ago to take over a steam power plant that was in poor repair and a system that was losing money yearly. The population was only about 2,000 at that time. For the past half-century he has given diligent and conscientious service to Sudbury whose growth from a struggling hamlet is due, largely to Mr. Martindale and men of similar calibre. In fact, the coat-of-arms of the Sudbury Hydro-Electric Commission, which bears the inscription: "Industry — Enterprise — Integrity," symbolizes, in striking fashion, the type of service he has given his beloved city.

One of the outstanding features of Mr. Martindale's career is the stress he has laid on steady expansion of facilities with the best possible materials. Under his guidance, the city's hydro-electric system has shown an operating surplus for the past 32 years while the final payment on outstanding debentures, amounting to $31,484.22, will be made in 1952.

Another worthy citizen of Sudbury is Chairman J. D. McInnes, who has been a member of the commission since it took office 14 years ago. Mr. McInnes has served as Chairman for 11 of these 14 years.

Sudbury's present Mayor, William S. Beaton, in his capacity as the Chief Magistrate, has been a member of the Commission for the past nine years, serving one year as Chairman. Leo A. Landreville, a young Sudbury lawyer, was elected to the commission this year.

While pausing to recount the happenings of the past, Sudbury Commissioners and their Manager-Secretary use these incidents mainly for the purpose of predicting the great achievements of the future. For Sudbury citizens have lost none of their ambition to make their city an even bigger and better place.

Confident that its situation in an area blessed with many natural resources is a guarantee of even greater accomplishment, the city is making a concerted bid for a larger share in Ontario's growing tourist trade. Sudburians proudly point to the fact that the city is the gateway to one of the best tourist, hunting and fishing sections of Canada, while Hydro is giving further impetus to this development by a steady expansion of rural distribution facilities in the surrounding area. This expansion is also designed to stimulate agricultural production in the Sudbury district.

Additional power required to facilitate further development of the natural resources in this part of Ontario will be provided when Hydro's Tunnel Development on the Mississagi River is completed. With the completion of the facilities afforded by Hydro's new frequency changer and transformer station, now under construction near Sudbury, the city will assume a new role as one of the most important centres for power distribution in Northern Ontario.

And so today Sudbury stands on the threshold of even greater achievements. Already it is the sixth city of Ontario, but from the standpoint of tourist trade and the mining industry, as well as its new association with Hydro, it has just started its career.

SUDBURY'S SENIOR COMMISSIONER

IN DECEMBER, 1935, when the Sudbury Hydro-Electric Commission came into being, JOHN D. McINNES was elected as a Commissioner. Mr. McInnes has never taken a holiday from his duties on this Commission in the past 14 years and has served as Chairman for 11 of these years. Born and educated in Winnipeg, Sudbury's senior commissioner has been engaged in the diamond drilling business in Sudbury for several years. He has also served his city as an alderman for three years.

Besides his civic interests, Mr. McInnes has been an active member of the Sudbury Lions Club of which he is a Past President. He is also a well-known sportsman, being affiliated with the Sudbury Curling Club (Past President); Sudbury Granite Club; Sudbury Fish and Game Protective Association and the Ontario Hunters' and Anglers' Association. Mrs. McInnes and their two sons are proud witnesses of his public spirited service in Sudbury.



John D. McInnes

APPROXIMATELY 10,800 Sudbury consumers enjoy the benefits of Hydro power which is distributed over 55 miles of line from the two substations shown above: No. 1, left, built in 1926, and No. 2, right, built in 1941. The two stations have a total capacity of 16,000 kilowatts.



Hydro Installing Emergency Steam-Turbine Generators

Units Located At Three Large Industrial Plants And On Two Hydro Properties Add 61,000 Kilowatts To Power Resources Of Southern Ontario System

IN preparation for the heavy power demands anticipated for the coming fall and winter, Hydro is proceeding with the construction and installation of additional steam-turbine generators at strategic locations in Southern Ontario.

When completed and placed in service towards the end of this year these emergency steam stations will have a total generating capacity of 61,000 kilowatts, or approximately 82,000 horsepower. This is slightly more than the capacity of the Stewartville Generating Station, on the Madawaska River, which was completed and placed in service in September of last year. All the power generated by the emergency units will be fed into the Commission's Southern Ontario System.

In order to provide this additional power, surplus steam at three large industrial plants will be utilized to operate emergency power units. In these instances, Hydro will install the generating equipment right at the plant of the industry supplying the steam. This is similar, in some respects, to the arrangement between the Commission and Polymer Corporation at Sarnia, where 20,000-kilowatt steam turbine generating equipment representing stand-by units operated by the Corporation, was placed in service last fall.

The largest of the new industrial installations is located at the plant of the Ontario Paper Company at Thorold. Here, construction of a special building is under way to house three 5,000-kilowatt turbine generating units. The structure is situated on land adjacent to the company property bordering the Welland Canal, and owned by the Department of Transport. Condensing water will be taken from and returned to the Canal.

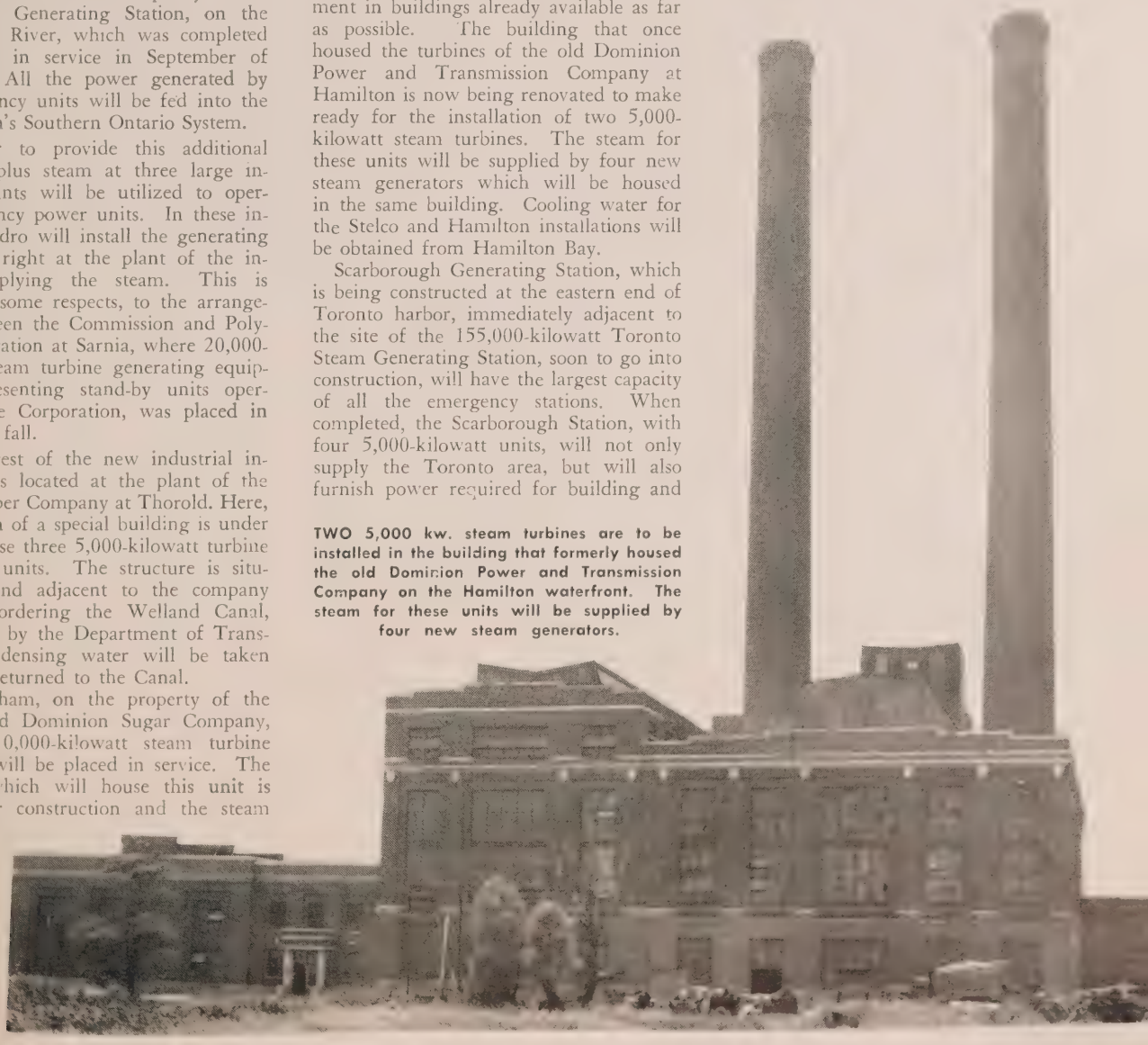
At Chatham, on the property of the Canada and Dominion Sugar Company, a single 10,000-kilowatt steam turbine generator will be placed in service. The building which will house this unit is now under construction and the steam will be supplied by the company, condensing water being obtained from the Thames River.

The program of building auxiliary generating plants also calls for the installation of a 6,000-kilowatt unit at the huge 350-acre plant of the Steel Company of Canada at Hamilton.

As well as harnessing surplus steam from industry, Hydro is going ahead with the construction of its own sources of steam-generated power, installing equipment in buildings already available as far as possible. The building that once housed the turbines of the old Dominion Power and Transmission Company at Hamilton is now being renovated to make ready for the installation of two 5,000-kilowatt steam turbines. The steam for these units will be supplied by four new steam generators which will be housed in the same building. Cooling water for the Stelco and Hamilton installations will be obtained from Hamilton Bay.

Scarborough Generating Station, which is being constructed at the eastern end of Toronto harbor, immediately adjacent to the site of the 155,000-kilowatt Toronto Steam Generating Station, soon to go into construction, will have the largest capacity of all the emergency stations. When completed, the Scarborough Station, with four 5,000-kilowatt units, will not only supply the Toronto area, but will also furnish power required for building and partial operation of the larger Toronto Steam Generating Station.

The combined output of these small generating stations will be of material aid in meeting the heavy power demand anticipated during the fall and winter months. Although the emergency is of a temporary nature Hydro is asking all consumers to continue to co-operate for the duration of the period that must elapse before the great projects now under consruction can be brought into service. In this respect the co-operation of industrial plants in making surplus steam available for generating emergency power is a splendid example.



TWO 5,000 kw. steam turbines are to be installed in the building that formerly housed the old Dominion Power and Transmission Company on the Hamilton waterfront. The steam for these units will be supplied by four new steam generators.

This and That

TO DATE, it would appear that no official survey has been made to determine the radio programs having the highest ratings among cows.

Strange as it may sound, this may be quite important because quite a number of farmers maintain that cows do provide more milk when a radio is placed in the barn and tuned in on a musical program at milking time. It is understandable that farmers will have more than a passing interest in music, especially if it is to be a factor in helping step up milk production.

If music is having a beneficent effect upon Elsie and her sisters, it would be interesting to know if a Viennese waltz provides a more compelling impetus than the cacophony of Boogy Woogy. It could be that Strauss has much more pull than either Schubert or Mendelssohn.

A survey might be the means of getting this whole thing in its true perspective and more milk in the pail. Indeed, if they really knew all the facts, it is possible that farmers might consider installing recording machines in the barns in order that specially selected records might be played. The ascertaining of such facts constitute what might be regarded as a challenge to the ingenuity of some popular opinion poll whose analysts might come up with some interesting observations after exploring the field of cows.

With Hydro's rural expansion program rolling along in high gear and farmers giving attention to the importance of adequate wiring, it is unlikely that Elsie's home will be overlooked. Electricity plus a radio or recording machine in the barn will enable the farmer to make appropriate "moo-sic" so that the barnyard beauties can "swing it" or not as they please.

BY WRITING this next piece, we assure ourselves of a free dinner with all the trimmings. We were dared to write about a story recounted to us at a recent convention of editors but with a dinner at "Steak" we accepted the dare. First let us make it absolutely clear that this is positively a true story. It is important to bear this in mind. We admit that we shall have to try and exercise the greatest tact and allow our readers to do a little "reading between the lines" to fully appreciate the "bare unvarnished facts." Having taken a deep breath, here goes. (Incidentally, it has a safety angle.)

A fellow editor, whose name cannot be mentioned for reasons which will be obvious later, wished to take his wife out to dinner to observe their fifth wedding anniversary. There was one problem. Little Mary, aged 3, could not be left alone. Being resourceful, like most editors (ahem!) our friend enlisted the services of a baby sitter, a young lady, aged 18. The baby sitter arrived and so the couple set out for an evening's fun.

by
The Editor

Upon returning home, the couple immediately made for the nursery which is located in a downstairs room. Mary was sleeping soundly but there was no sitter. For a minute the couple were puzzled and then the wife had an inkling. She went upstairs and came down again and said in a low voice to her husband: "She is 'there' I can see the light under the door."

Time passed—half an hour—but no sound from the baby sitter. The couple became worried. "Jack," said the wife, "you've got to go up and see what's wrong."

"But," sputtered Jack, "how could I go in 'there'? She might be having a bath."

But wifie was adamant and so Jack went upstairs. He hesitated at the door but, finally, mustered courage and turned the handle. The door was unlocked. He entered.

The next minute, wifie heard her husband laughing uproariously.

She bounded upstairs, two at a time and entered 'the room.' There was her husband almost in convulsions with laughter, sitting on the edge of the built-in bath and the baby sitter was sitting on—well she was sitting and, despite frantic efforts, couldn't get to her feet.

"Oh, Jack, we should have told Jean that the painters had been doing some varnishing up here today," moaned wifie.

At that moment, Jackie gave with another roar of laughter and fell back into the empty bathtub and immediately started to moan and groan. He couldn't move. "Get a doctor, quick," he cried to his wife.

Wifie bounded downstairs to the telephone and, very shortly, a doctor, complete with black bag, entered 'the room' and blinked in amazement as he saw Jack's feet sticking out of the bathtub and a blushing young lady who had apparently been completely immobilized. Wifie blushed, too, and then lamely remarked: "That's Jean, doctor, she's been baby sitting."

The doctor gulped and then dryly remarked: "Quite so. Now, perhaps, you might tell me what this is all about."

The facts were unfolded; then it was the doctor who chuckled. He quickly diagnosed the cause of Jack's pain as a broken arm and shoulder injuries. "I'll have to send you to hospital, Jack," he said, "and Jean, you'll have to come along, too. In your case, we'll soon get to the seat of the trouble and effect a cure," he smiled.

The ambulance was called and after the attendants had removed Jack into the waiting vehicle, they returned with a screwdriver. Jean, still firmly attached to the wooden part of the 'chair' which had been pried from its moorings, was carried down to the ambulance. While Jack's arm was being put in a cast, the baby sitter was doing some more sitting—this time in a special chemical bath where she awaited 'the desired result.'

And, there you have the unvarnished—or should we say varnished?—facts. The safety angle is to look before you sit!

ONTARIO'S EL DORADO

(Continued from Page 7)

this mine, unlike its near neighbour, Hollinger, showed little ore on the surface. Sandy McIntyre, however, when he staked his original claims in 1911, shrewdly judged from the local geology that gold would be found beneath the overburden of earth and igneous rock. He was right. Over the years more claims were acquired, and the McIntyre property now comprises about 1,450 acres. Since 1925 what is practically a new mine has been fashioned and the quartz veins have been followed far under Pearl Lake. At one place McIntyre and Hollinger workings meet to provide free access from one to the other in cases of emergency. We understand that this barrier remains unlocked as a symbol of the friendly relations which subsist between the two companies, while it exerts an influence sufficient to prevent either company from succumbing to the temptation of sampling the other's wares!

Up to April 1949, McIntyre, we were told, had milled 19,004,963 tons of ore, with a gross value of $190,585,222. At the present time the mine is said to be producing at the rate of about 190,000 fine ounces a year.

Hydro "Muscle" For Hoists

The Hydro load at McIntyre at present averages about 6,000 kilowatts (8,000 hp). There are in all 693 electric motors in use. These range all the way from one-fiftieth to 2,450 horsepower, significant of the varied uses to which Hydro power is put. The largest are installed in the main hoist house to drive the hoisting equipment for the cage and skips. The two ore skips hoist in balance and are operated at a speed of 2,400 feet a minute. The miners' cage is double-decked and travels at a speed of 1,800 feet a minute. Movements are regulated by a system of electric signals. Stepping into the cage with our guide, we were soon down at the 2,875-feet level where diamond drilling and mucking were in progress.

Operations Underground

Diamond drilling is carried out to obtain samples of new ore before further stoping and drifting are decided upon. It is an entirely different operation and calls for much more skill than the drilling of holes for blasting.

Old-fashioned mucking with shovels has long since been superseded in Ontario mines by machines operated by mechanical power. The scoops of these machines dig into the broken-down ore and toss it back into dump cars shunted into position by electric trolley or battery-driven locomotives. At McIntyre, Hollinger and many other big mines, the preliminary crushing is carried out underground. Electric trains operating on the higher levels dump their loads into ore passes through which the ore descends to the crusher located near the bottom of the shaft where it is reduced to 6-inch size before elevation to the surface.

Internal Hoisting Shaft

In mines where the workings are carried to any great depth an internal hoist usually supplements arrangements at the main shaft. This is the case at McIntyre, where an auxiliary shaft leads down from the 3,750-foot to the 7,000-foot level, the ore being conveyed in trains from the top of the shaft and dumped through to the underground crushers in the same way as from other levels.

The underground hoist room at McIntype is carved out of the solid rock, and with reinforced gunited walls and roof, presents a quite imposing appearance. There is a bank of transformers in one corner through which the Hydro power passes to the motors which drive the hoisting equipment for the ore skips.

The compressed air used in underground operations is supplied through four compressors located on the surface. These have a total capacity of 10,200 cubic feet per minute. Three of these compressors have 600-horsepower drives, while the fourth is serviced by a 400-horsepower motor. Although the temperature rises as one goes further under ground, we found the ventilation good at all levels. All the drifts and crosscuts we traversed were of good height and width for working in comfort, and, much to our surprise, it was comparatively dry underfoot. In sections where there was any possible danger of rock falls, the roofs and walls were buttressed with heavy timbers, and many other precautions for the safety of the workers were in evidence.

"Hydro" Bath For Workers

After the miners come up from their shift underground, they are encouraged, especially in wintertime, to pass through the sun-lamp chamber provided by the company. Here Hydro power, transformed to ultra violet rays, has an undoubted healthful and stimulating effect.

When the ore reaches the surface it again passes through crushers which reduce it to a three-sixteenth of an inch mesh. It then goes on to the ball mills which pulverize it to the consistency of a very fine sand. As there is a comparatively small amount of gold-bearing mineral in a ton of ore, it is customary to separate the mineral from the waste by some form of concentration. The method employed by McIntyre is the floration process, which causes the mineral to float at the top of a liquid pulp, while the waste remains submerged and is later discarded. The mineral is then ground in a cyanide solution which dissolves the gold. Zinc dust is used to precipitate the gold out of solution, and the resulting precipitate is then melted in oil-fired furnaces and the gold poured into moulds. The gold bars, approximately 96 to 97 percent fine—some silver is combined with the gold—are shipped to the Mint at Ottawa for further refining and sale.

Impressive Shaft House

Hollinger's impressive concrete shaft house, with the huge "bee hive" ore-storage bin nestling under its wing, dominates the landscape in the vicinity of Timmins. Appropriately enough, this structure rises close to the spot where, nearly 40 years ago, Alexander Gillies, crashing through the bush, found his fellow prospector, Benny Hollinger, dancing about, throwing his hat in the air and shouting "Gold! Gold!" in a voice that sent all the wild life in the neighbourhood scurrying for cover. Yes, there was gold showing right on the surface, and the discovery started a "rush" to the Porcupine area that reminded "Old-timers" of the Yukon and the Klondike.

When the fever of staking, buying and selling abated, there were many disappointments, for gold, before it is won, is as capricious as a woman with many suitors. Apart from that, the trouble here seems to have been that mining even on promising properties was at first carried out only in a superficial manner. It was not until the options were taken up by Noah Timmins and his associates that underground development on the Hollinger property began in earnest. In spite of two disastrous fires in the summer of 1911, work was carried forward with courage and determination until in 1916, the Timmins claims were amalgamated with other properties to form the Hollinger Consolidated Gold Mines Liimted.

We were welcomed to Hollinger by E. L. Longmore, the General Manager, who kindly placed at our disposal Norman Greene, Publications Editor, who accorded us every assistance on our tour.

The Hollinger Mine has had a remarkable record since the beginning of operations. It has milled upwards of 50,000,000 tons of ore. This was achieved, of course, with the very material assistance of Hydro Power, which has continued to be a prime factor in all subsequent developments. In 1948 there were 1,233,581 tons of ore milled, with a net value, excluding tailings, of $9,996,746.

Link Between Systems

Power for Hollinger passes through a substation which forms a link between

(Continued on Page 31)

CUT LIGHTING BY 50 PERCENT

In an effort to save electricity, the Argentine Government has decreed that street lighting be cut 25 percent, while parks and plazas will be dimmed 50 percent. Earlier closing hours have been established for stores and offices, while the use of electricity in shop windows and advertising signs has been curtailed.



The holiday pattern of August is varied. If last minute plans for a vacation leave you stranded with numerous holiday folders but no reservations, we suggest you climb out of your everyday groove. Relax in weekend "bits." You can feel luxuriously happy, just lying lazily in the shade of backyard trees and watching white clouds trail each other across an open sky.

* * *

Photo negative filing: When fastening snapshots in your photograph album, put each negative under the matching print . . . then adjust the corners as usual. This keeps the negatives from the light . . . and you will always know where to find them.

* * *

Bibless aprons are easily hung on the customary hook if you sew a one-inch brass curtain ring on the inside of the apron belt at the seam where the sash joins the front band.

* * *

New life for the loosely woven straw hat can be gained when you dip it in a solution of gum arabic. This freshens and stiffens not only crushed straw, but wilted veils.

* * *

Sunday "brunch" can be served on one plate when you prepare French Omeline. Pour ½ cup of honey over a quart of washed berries and let stand while making French toast. Spread a generous portion of berries over each slice of your toast.

* * *

Here is a pleasant postscript to a heavy dinner . . . Fluted Cantaloupe. Peel a cantaloupe and flute the side with a melon ball cutter. Slice into ½ inch servings and scoop out the seeds. Place these slices on your glass plates. Poke nuts into the pieces of trimmings and arrange these in the centre of each slice, then sprinkle with a little minced mint.

* * *

Do you have an electric grill? It does a good summertime job. Grill man-sized hamburgs on one side, bun halves on the other, then everyone takes a plate and makes a sandwich. Slice tomatoes and onions while the lunch is sizzling.

* * *

The modern sewing slogan is: "Stick and it's mended." Buttons won't come off easily if you stick a little colorless nail polish on the threads. A piece of sticky tape pressed under a jagged tear, keeps it from showing.

* * *

Coloured nail polish may be used to mark 2-, 4- and 6-cup levels on your coffee vaculator. This saves time measuring the water and leaves no query about your usual good brew of coffee.

* * *

Fresh coffee is a rare treat. But now it can be made in restaurants. Recently we watched green coffee beans tumble into an infra-red electric machine and run along into a grinding machine as they were toasted by the second. It was an inspiration for a cup of coffee.



ORANGE-PEACH MARMALADE

12 medium-sized peaches
3 medium-sized oranges
Peel from 1½ oranges
½ cup chopped red cherries
4½ cups sugar (approximately)
½ cup nut meats (optional)

Wash, peel, and pit peaches. Peel oranges, and grind peaches, oranges, and orange peel. Measure into a large preserving kettle and add an equal amount of sugar. (If fresh cherries are used, add them at this time, too, but if the cherries are canned add half way through the cooking period.) Bring to boiling point slowly and boil rapidly until thickened—approximately 25-30 minutes. Stir occasionally to prevent burning. Just before removing from heat, nut meats may be added. Pour into sterilized jars and seal. Makes 9 glasses (6 oz. size).

To keep peanut butter from losing its oil and becoming too dry, store the jar upside down. Once a peanut spread has become dry you can soften it by adding peanut oil, olive oil or salad oil, and mixing it thoroughly. Or, mix some horseradish with it and it will be moist again with "something new" added.

* * *

Peel tomatoes as dinner is being cooked, the easy way. Pop the tomatoes on the oven shelf for 3 minutes while the meat is roasting. The dry heat will loosen the skin just as well as hot water does.

* * *

Coffee cream is now being canned . . . and it is wonderful to take to the cottage. It's 18 percent butterfat. We find whipping this cream is easy if you chill it in the refrigerator freezing tray until partially frozen or of a mush consistency. Beat as you would regular cream. You'll be amazed to see fluffy high peaks of whipped cream.

* * *

New potatoes may darken with too much iodized salt . . . use table salt sparingly while cooking and use a little extra sprinkled over them when you drop on a lump of butter or margarine in the serving dish.

* * *

Among the new time-saving foods we like the package of prepared salad jelly. It is most convenient. Grated cucumber added to the jelly gives a different, refreshing flavour.

* * *

Nut sandwiches makes a fine addition to a summer salad plate of vegetables or fruit. To make the spread, simply cream the butter well and add finely ground peanuts.

* * *

Cauliflower is especially good when served with finely crushed cracker crumbs that have been lightly browned in margarine and sprinkled with grated cheese.



—Photo by Authenticated News.

THIS ILLUSTRATION shows the huge manmade Grimsel reservoir in the Bernese Oberland, forming part of the famous Oberhasli power development in Switzerland.

WHERE ELECTRICITY IS LIFE

Drought in Switzerland

THERE is a dim-out in the big cities of Switzerland from Geneva and Lausanne to Berne and Zurich because of the drought. There is not enough "juice" left in the storage plants to permit any extravagance in the way of Neon lighting and illumination of shop window fronts in the great Bahnofstrasse of Zurich or the busy commercial centre of the rue de la Confederation in Geneva. For lack of water has brought many generating stations to a standstill, and in Switzerland, a land entirely without coal—or nearly so—that is a situation of the gravest possibilities.

No country in the world—not even the United States—is so electrically-minded as Switzerland. It is true that at Lausanne in the canton of Vaud and in certain places in the so-called German Switzerland such as St. Gall and Winterthur you can still see clumsy looking steam locomotives chugging away along the tracks and making an otherwise almost immaculate country momentarily smoky and dirty. But they are relics of the past, and their end is not far off. Otherwise the Swiss State railways, the most efficient of any on the Continent, are propelled entirely by electricity and that electricity is for the most part provided by water power. Likewise, electricity provides the power for great precision watch and instrument factories of Le Locle and Chaux de Fonds, and the manufacturing plants of Frauenfend and Herisau, on which the economic life of the Confederation depends so largely. It is a great mistake to think of the Swiss as a race of hotel keepers and waiters, and, above all, hall porters. The tourist industry is of small importance by comparison with the production of delicate machinery of all kinds, in which watch making is pre-eminent.

WOULD HARNESS ATOM

• United States Air Force work on plans for an atomic-powered airplane is "probably the most exciting of new experiments with atoms," according to Robert F. Bacher, member of the Atomic Energy Commission. In an address to a scientific conference, the commissioner stated that atomic energy should be harnessed for production of electrical power in quantity. The world's potential atomic power supply would be increased 100 times, Mr. Bacher added, if self-fueling reactors, now being built, developed according to plan. He said that the Commission planned to build a reactor works at an estimated cost of $500,000,000.

• EDITOR'S NOTE—This interesting description of Switzerland's hydro-electric developments by John Hassall, English journalist, written at the height of the country's recent power shortage, demonstrates the serious effect drought can have on the generation of electricity which is the life blood of this mountainous but picturesque little republic.

No Coal

The absence of coal early led to the harnessing of torrents and waterfalls of which there are a great number in the High Alps, apart from the utilization of the waters of the great rivers Rhine and Rhone, both of which rise within the Swiss borders.

There is a typical example of water utilization in the famous city of Schaffhausen, capital of the canton of the same name in the northernmost extremity of the country. At one time the town was only visited because of the great falls of the Rhine as the river sweeps in an almost right-angle curve and tumbles over precipitous rocks many feet into a whirlpool below. The immense power was neglected until late in the last century and then dams were made. Since 1900 the whole town of 20,000 people have been fed by the great local electric works, and today by a grid system the whole of the canton is supplied from this same plant owned by the people of Schaffhausen.

It would be impossible to maintain the great winter resorts of St. Moritz and Davos and Murren if it was not for the natural electricity supply which is the life-line of the whole country. In fact, it is difficult to visualize Switzerland existing under modern economic conditions without electric power. It would be impossible for her to survive, for the products of electrically driven factories make the francs which enable the Swiss to buy food to eat. Hardly any grain is grown in the country and what there is is of poor quality. All flour for wheat has to come from abroad, and it has to be paid for. And the same may be said concerning many other foodstuffs.

But if the factories cannot work because of lack of water power behind the dynamos, then the clock stops in the land of the high Alps.



ONTARIO POWER Generating Station below Niagara Falls

Niagara Landmark

DESIGNED to harmonize with its surroundings by blending with the cliff behind, Hydro's Ontario Power Generating Station is located at the bottom of the Niagara River gorge within a stone's throw of one of the seven wonders of the world, the Horseshoe Falls. Literally millions of persons, tourists from every section of the North American continent and from all parts of the globe, have looked down on the broad, long expanse of the roof of the Ontario Power House as they have gazed at the cataracts from the Canadian shore. Visitors looking at the Horseshore Falls from the American side of the river obtain a clear, unobstructed view of the plant as indicated in this picture taken from Goat Island.

At the top of the bank, in the left centre background, is seen Hydro's Niagara Regional offices. Immediately below is the battery of 24 giant searchlights that illuminate the cataracts nightly in white and also coloured lights, providing an unusual spectacle. To the left of the lights is the entrance building in Queen Victoria Park where an elevator and tunnel permit access to the Ontario Power Plant below the bank. At right of the battery of lights is the Park Restaurant operated by the Niagara Parks Commission, a popular dining spot patronized by thousands of visitors to the falls area.

The Ontario Power Generating Station is one of the most interesting plants on the Niagara River. It was constructed by a privately-owned company. The work on the project began in 1902, with the first three units going into operation in 1905. By 1918, all fifteen units were in service, and the total rated capacity of the plant is in excess of 180,000 horsepower. In 1917, Hydro purchased the capital stock of the Ontario Power Company and its subsidiary, the Ontario Transmission Company, acquiring the company's water rights.

Water for the operation of the Ontario Power Plant is drawn from the Niagara River at a point about a mile above the crest of the Horseshoe Falls, and conveyed 6,500 feet through conduits laid underground; then through steel penstocks placed in tunnels through solid rock to the generating station at the base of the cliff opposite Goat Island. From this point it passes through the horizontal turbines, thence beneath the power house to the river.

The turbines are of the double-runner, central-discharge type and range in capacity from 11,500 to 17,000 horsepower The output of the generators is transmitted by underground cables to the transformer and distributing station.

The various buildings and other structures of the "OP" development are prominent features of the surroundings of Niagara Falls and occupy portions of the park reservation on the Canadian side. They are specially designed to harmonize with their surroundings—the original Company and subsequently The Hydro-Electric Power Commission of Ontario co-operating with the Niagara Parks Commission in promoting the scenic beauty of the area.

Hydro's Abitibi system and the system recently acquired by the Commission from the Northern Ontario Power Company. It is stepped down to 12,000 volts for primary distribution to the transformers at the mine. Monthly loads are now averaging about 9,000 kilowatts (12,000 hp).

Excluding a very large number of machines with a lower rating than one-half horsepower, there are 494 motors in the mine with a total name-plate capacity of approximately 27,000 horsepower. As at McIntyre, the largest of these are employed on the hoists. In the hoist room at the ore shaft two giant 2,000 horsepower motors are in service, while drum-and-cable equipment for the underground hoist room on the 2,450-foot level are operated and controlled by a 1,500 horsepower motor. There is also a man and material hoist at the 3,800-foot level driven by a 1,000 horsepower motor. Underground, Hollinger has one entire level rigged for the training of new employees.

Conveyor Belt Used

For its ore-gathering trains Hollinger employs no less than 33 trolley- and 5 battery-powered locomotives. On the 2,950-foot level an electrically operated conveyor belt, 1,500 feet long feeds the ore from the underground crushers to the loading pocket where it is loaded into skips for the trip to the surface. The underground crushers are powered by two motors with a combined capacity of 200 horsepower, while a 75 horsepower motor is used for operating the conveyor belt. There are 22,000 feet of underground cable conveying 3,300-volt power for hoisting, pumping and various other operations. On the surface, 52 motors, with a total capacity of 1,447 horsepower, service the crushers, while 155 motors, with a capacity in toto of 5,376 horsepower drive the machinery in the mill.

A feature of the Hollinger Mine is an aerial tramway which brings sand and gravel in from the company's pits, three and a half miles distant. This material is used as backfill in the underground workings and is shared with McIntyre. The tramway is, of course, operated by Hydro power which is applied through a 125 horsepower motor. Hydro also supplies the power for the pumps which start the mill tailings on their mile and a half journey to the 640 acre site reserved for their reception.

Last year Hollinger purchased from Hydro power to the extent of 62,646,970 kilowatt hours. Hydro services are supplemented at need by Diesel generating machinery, which is connected with 45 motors with a total capacity of 2,000 horsepower. Last year this stand-by equipment was used to the extent of 157,500 kilowatt hours.

Hollinger, we were led to understand, in its refining processes, entirely separates the silver from the gold, shipping the two metals to the Mint in the form of fine gold and fine silver.

Visit To Dome

Discoveries at the site of the Dome Mines Limited, located near South Porcupine, date back to 1910. Production was started in 1912. There are now about 70 miles of underground workings, with a maximum depth of 4062 feet, while approximately 205 miles of diamond drilling have been carried out. In 1948 the company milled 620,800 tons of ore, with the average grade running at $9.10.

Dome Mines use a Hydro load of approximately 4,500 kilowatts, or around 6,000 horsepower. As at the other mines we visited, much of this power is associated with the operation of safety equipment, the largest type of motors servicing the hoists and the air compressors. On its underground ore trains the company employs 20 locomotives, including 2 trolleys.

Amalgamation Process

Underground routine is similar to that at McIntyre and Hollinger. We had learned, however, that, after the crushing, Dome employed a different method from that of the other two mines in the separation of the gold from the ore. We questioned R. E. Dye, General Manager of Dome, about this, and he courteously extended an invitation to us to visit the mill and see the amalgamation process, as it is called, in operation.

We were conducted to the section of the mill where the blanket tables were set up. When the ore is finally ground down to the proper consistency, it passes over these tables, which are equipped with mats or blankets to collect the visible gold and various sulphides. The blankets are then removed and washed off, and the concentrates treated with mercury in an "amalgamation barrel." The gold attaches itself to the mercury which is then squeezed in a press. A hard amalgam is recovered, of which about 50 per cent by weight is gold. This hard amalgam is sent on to the refinery and the mercury is distilled and driven off by heat. The resulting gold sponge is melted in a suitable furnace and poured into moulds for shipment to the Ottawa Mint. We were led to understand that, with this type of processing, the bars turned out were about 88 percent pure gold and 9 percent silver, with the remaining 3 percent impurities. The final refining is carried out at the Mint.

Dome's "Electric Eye"

Another feature at the Dome Mines is the electric eye used to control the processes in the tempering of steel drills. The particular type of apparatus used was developd by a member of the company's staff and gives evidence of how effectively Hydro power can be used in the most delicate of controls.

Owing to depleted man-power, the gold mines were unable to undertake any large-scale new developments or expansions during the war years. Now the situation is said to be improving. The tremendous programs of new development and rehabilitation being carried out by Hydro in every section of the province, with their promise of adequate power for all classes of consumers, should also be of assistance to the gold-mining industry. They should help established mines to get back into full stride as well as providing an incentive to new exploration and discovery.

P. D. Ross Passes At Ottawa

ONE of the founders of the Ottawa Hydro-Electric Commission, Philip D. Ross, 91, president and publisher of the Ottawa Journal, noted sportsman and long active in Canadian and municipal affairs, died at his home in Ottawa on July 4, after a series of heart attacks.

Born January 1, 1858, in Montreal, he graduated from McGill University in 1879 with honours in engineering. Shortly afterwards he began an outstanding career in journalism with a $5-a-week job on the Montreal Star. In 1887 he bought a half interest in the Ottawa Journal, purchasing the remaining half interest the following year. During the 62 years in the publisher's chair, he became one of the country's best-known journalists and editors. An ardent promoter of the Canadian Associated Press, at the beginning of the century, he was one of the founders of the Canadian Press.

A governor of McGill University and member of the Dominion Council of Boy Scouts, Mr. Ross, in 1931, was asked to accept an appointment as Lieutenant-Governor of Ontario but declined owing to the pressure of other duties. In 1905 he combined efforts with several others to establish the Ottawa Hydro-Electric Commission. At the time of his death, he was still a member of the Ottawa Commission, of which he had formerly been Chairman.

He was awarded an honorary degree of Doctor of Laws by Queen's University in 1926, and four years later became chairman of the Ontario Royal Commission on Public Welfare. This body made an exhaustive study of prison welfare and charitable units throughout Ontario.

A sportsman since his college days, he was captain of the McGill football team, right-winger in O.H.A. circles, and an expert in sculling, fencing, and boxing. He was one of the two original trustees of the Stanley Cup. In his later years, he retained his love of sports, and became an enthusiastic curler and golfer, shooting a 78 on the Royal Ottawa links at the age of 81.

ONE-DAY "PATROL"

(Continued from Page 20)

For each, it was the first visit to the Niagara District, about which they had heard and read so much. On arrival at the famous whirlpool, they eagerly clambered aboard the Aero Car to view the deep treacherous pool and river rapids from this unique cable car. For this trip, they were the guests of the manager, Harold Brooker.

Their next scenic trip provided a cool, refreshing escape from the heat. The scouts were given a trip on the tiny Niagara River steamer, the "Maid of the Mist," through the courtesy of the president, Frank LeBlond.

Undaunted by the heat, the scouts were eager for more sight-seeing. They saw the beautiful Niagara Parks' Oakes Garden Theatre, Queen Victoria Park, the Niagara Parks boulevard, Hydro's Toronto Power Plant, Dufferin Islands and Navy Island, where William Lyon McKenzie fled during the rebellion of 1837, and set up his short-lived provisional government.

At the village of Chippawa, they saw the intake for Hydro's Chippawa-Queenston power canal. Later they viewed the whole panoramic scene of the upper and lower Niagara River from Oakes Drive adjacent to historic Portage Road. Then they were taken to Table Rock House on the brink of the Horseshoe Fall for a view of the cataract from the top of the bank. Through the courtesy of S. E. Albertson, manager of the Niagara Parks Table Rock House, the scouts made the trip down the elevators and through the tunnels behind the Horseshoe Fall to see the water thundering over the precipice into the lower river.

The final chapter in a busy day was a visit to Hydro's two plants at DeCew Falls. Although they had packed in as much sight-seeing as the average visitor sees in three or four days, their enthusiasm failed to dim. At the new plant, the scouts (some of whom are keenly interested in engineering) asked to see all phases of the operations. They kept up a steady flow of questions and were delighted by the comprehensive explanations given by a plant operator. The visit was completed with a brief inspection of the original plant built in 1897. The old, but efficient, French, Italian and German-made turbines in this plant greatly interested the scouts.

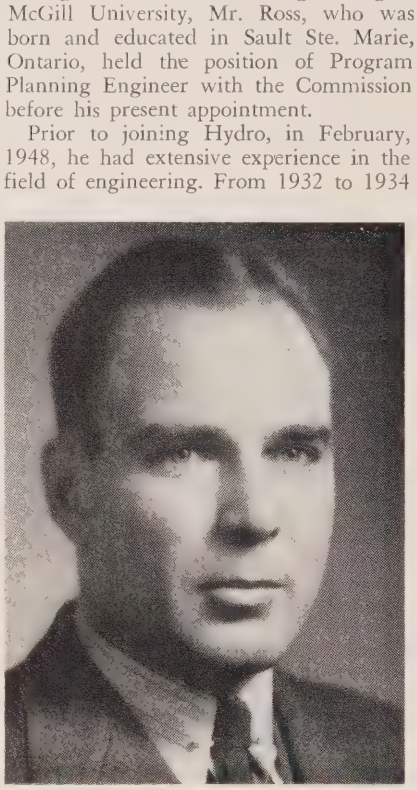
And, so, today Hydro has a new meaning for five scouts. Their thrilling tour of the Niagara Region and inspection of Hydro plants that generate electrical energy to light homes in towns and cities, and to provide power for farms and factories, has given them a broader conception of Hydro.

NAMED ASSISTANT DIRECTOR OF F. C. D.

Arthur L. Ross has been appointed Assistant Director of Hydro's Frequency Conversion Division.

A graduate in electrical engineering of McGill University, Mr. Ross, who was born and educated in Sault Ste. Marie, Ontario, held the position of Program Planning Engineer with the Commission before his present appointment.

Prior to joining Hydro, in February, 1948, he had extensive experience in the field of engineering. From 1932 to 1934



A. L. Ross

he was assistant to the Plant Engineer at Noranda Mines Ltd., in Toronto, where he was also in charge of production. In 1940 he joined the staff of Defence Industries in Montreal, as Project Engineer, being transferred the following year to the company's Ajax division as Production Superintendent. In 1946 he became Work Manager of Mueller Ltd. in Sarnia, a post which he held until coming to Hydro.

Married, with one son, Mr. Ross is a member of the Engineering Institute of Canada and the Association of Professional Engineers, and a former member of the Kinsmen Club at Ajax and the Sarnia Kiwanis Club. In this spare time he enjoys skiing, skating, swimming, and sailing, and takes a great interest in woodworking.

BUKATOR HONORED

A high honour has been conferred on George Bukator, youthful reeve and Hydro commissioner of the Village of Chippawa. This month he was acclaimed "the outstanding young man of the year in the Greater Niagara area."

Reeve Bukator received this honour in the annual poll conducted among the citizens of the Greater Niagara area by the Niagara Falls Junior Chamber of Commerce. Purpose of the award is to give greater public recognition to young men in the Greater Niagara sector who are rendering outstanding public service.

Bukator, who holds two bronze medals and a parchment for life-saving, has been a member of Chippawa village's municipal council for three years (two as a councillor and one as reeve).

In 1938, he attained considerable prominence when he rescued two youths from the Welland River. Six years later, he risked his life in the upper Niagara River to save three boys who were being carried to the brink of the Horseshoe Falls on a home-made raft. For the first rescue, he received the Royal Humane Society parchment and for the second the Carnegie medal and $500, and also the Royal Humane Society medal.

CHARLES HAYS PASSES

Associated with many Hydro projects, including the Aguasabon development, of which he was Construction Superintendent, Charles L. Hays died suddenly at his home in Toronto on July 12. He was 62.

He received his early education in Welland and was a graduate of Queen's University. For some time Mr. Hays was active in the ship-building industry in Toronto and Newfoundland. Later he was connected with the building of numerous docks, and was an engineer on the Trent Canal and the Welland Ship Canal. His most recent undertaking was the supervision of the building of a powerhouse.

Such was his popularity on the Aguasabon job that the lake which forms the forebay of the development was named in his honour.

Surviving are his widow, the former Elizabeth Douglas; two daughters, Mrs. Owen Barton and Mrs. William Thompson, both of Toronto; and a brother, Everett, of St. Catharines.

WHEEL CHAIRS DONATED TO LONDON HOSPITAL

Through the efforts of employees of the London Public Utilities Commission, the War Memorial Children's Hospital in London is richer by eight wheel chairs, costing $470.

The recently-donated chairs were put to immediate use and, according to the superintendent, Dr. C. J. Kirk, "are proving an invaluable aid in the treatment of many of the patients."

In addition to the donation of the chairs, the London employees have contributed $1,000 to the Building Fund of the Children's Hospital. Other contributions include the gift of two Gatch beds, at a cost of $250, for the public ward of Victoria Hospital, and $300 for furnishing a room in the new addition to the same hospital.

Since 1940, a total of approximately $7,000 has been contributed towards various charities by the London employees.

Lighter Lines



"You're not even breaking your clubs right."

Professor (to noisy class): Now I'm not going to begin the lecture till the room settles down.

Voice from back of room: Why don't you go home and sleep it off?

* * *

At the bedside of the dying Scottish merchant, his sorrowing wife and family gathered for a few last words.

"Can you hear us, Father?" sobbed his wife. "We're all here, praying for you—your sons and daughters and your old Maggie."

With an anguished scream the old man sat up in bed. "Who's looking after the store?"

* * *

Policeman: Didn't you see this lady coming? Why didn't you give her half the road?

Unhappy motorist: I would have, only I couldn't figure out which half she wanted.



"I'm out of ideas—we'll just have to wait till they tell us something not to do!"

"I saw a girl the other day who had a good method of beating the heat wave. She took off her stockings, turned them inside out, and put them back on again."

"What possible good would that do?"

"I didn't know either, so I asked her. She said her legs were hot so she turned the hose on them."

* * *

Tourist (to villager): What's the speed limit here?

Villager: Haven't got any. You people can't go through too fast for us.

* * *

Father Robin had been away for some time, and when he returned he found three eggs in his nest. That was fine, except for the fact that only two of them were blue—the other was white.

He called Mother Robin over for an explanation.

"Oh," she said coyly, "I just did it for a lark."

* * *

Janey (aged five): Mummy, is it true that before people are born they're dust?

Mother: Yes, dear.

Janey: And when they die they go back to dust?

Mother: Yes, dear.

Janey: Well, I looked under my bed just now and there's somebody either coming or going.

* * *

Daffy Definitions:

Birthday—under 21, you look forward to it; 21 to 35, you accept it; 35 to 69, you ignore it; over 69, you emphasize it.

Shampoo—a soap that's 90 percent sham and 10 percent poo.

Drizzle—two drips going steady.

Stalactite—one of those rock affairs whose direction you can never remember.

Holiday—a day when you can count on it to rain.

Babble—a noise delightful in a brook but unpleasant in a woman.

Wink—medical term for a twitching of the eye, occurring on the appearance of a pretty girl.

Elephant—an animal occurring in one of three colours, depending on whether you're on a safari, a church committee, or a weekend party.

* * *

"Before I met my wife, I just couldn't take any interest in my work. But now I can't think of anything else. Why, I even dream about it."

"Really? Just what is your business?"

"Undertaking."



"... All I did was to wave my hand like this to greet him—and whamo!—he passes out!"

"I am inspired by all these bright and shining faces," began the lecturer.

And one sweet young thing pulled out her powder puff and set to work.

* * *

Passenger: What's the best thing to eat on shipboard?

Ship's Captain: Raspberry jam. It tastes the same both ways.

* * *

Little Reggie answered the door when the teacher called.

"Is your mother in?" she asked.

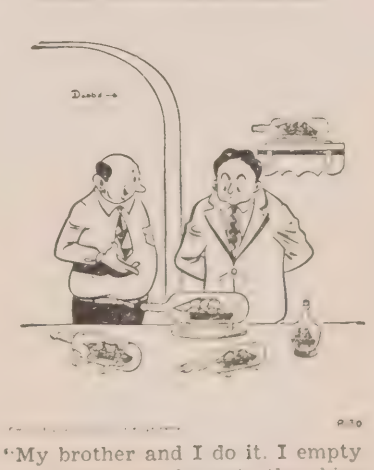
"No, she ain't."

"Well, how about your father?"

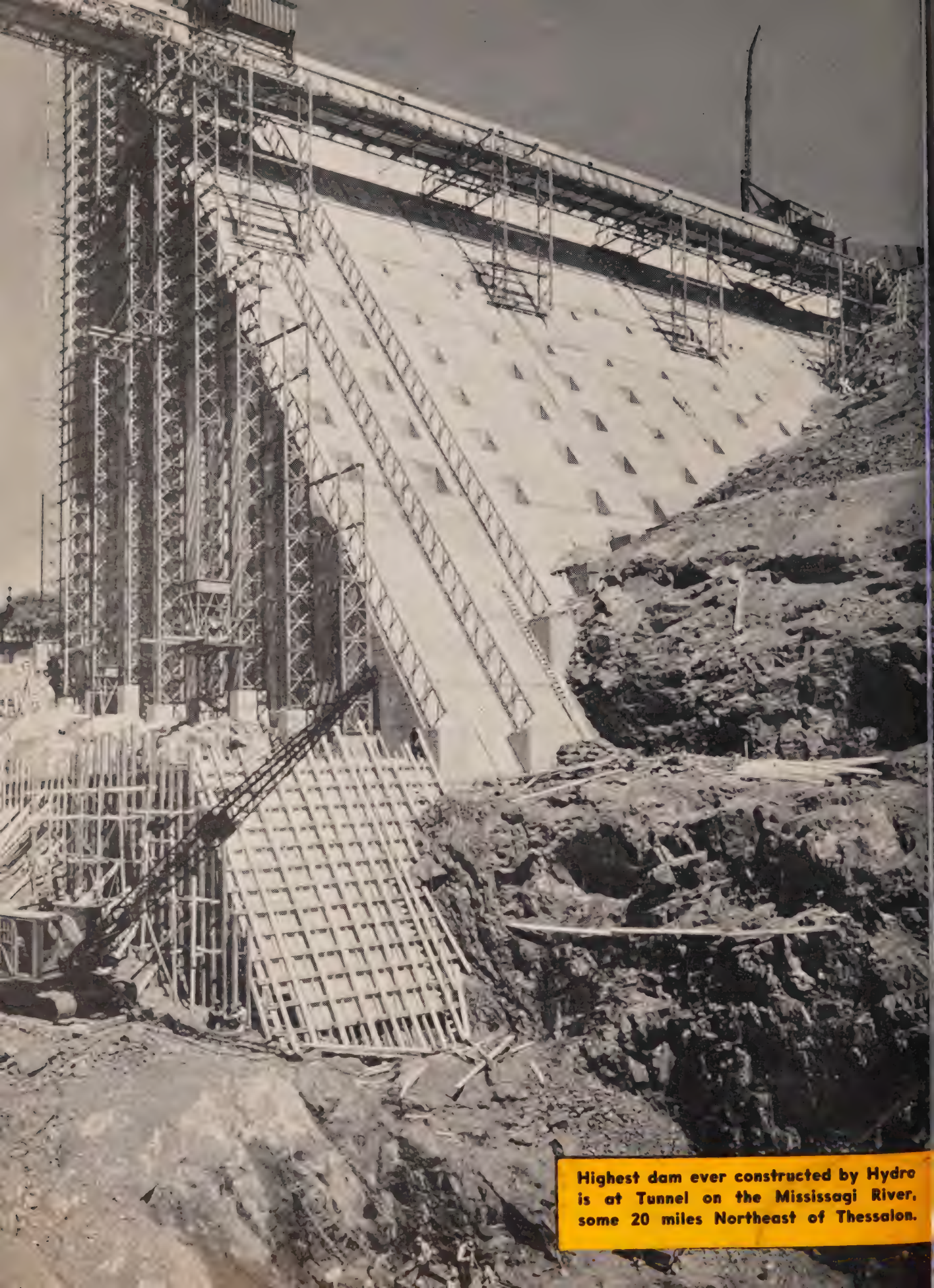
"He's went out too."

"She ain't! He's went!" the teacher exclaimed. "Where's your grammar?"

"Oh, she's upstairs having a lay-down."



"My brother and I do it. I empty the bottles and he puts the ships in."



Highest dam ever constructed by Hydro is at Tunnel on the Mississagi River, some 20 miles Northeast of Thessalon.

HYDRO News



A MEMORY OF THE C.N.E.

VOLUME 36 SEPTEMBER, 1949 NUMBER 9



Montmorency Falls, six miles east of Quebec City, shares honours with Niagara's mighty cataracts as one of the most famous waterfalls on this continent. This unusual photograph from the camera of a frequent contributor, F. K. Dalton, a member of the Supply Inspection Staff, depicts the rugged grandeur of Montmorency mirrored by the peaceful pool in the foreground

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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SEPTEMBER, 1949

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COVER SHOTS

CLEARLY outlined against the night sky, the Ontario Government building depicted on this month's front cover seems to symbolize the spirit of the Canadian National Exhibition. Bonds and babies are the central theme of the back cover illustration as a tribute to the next issue of Dominion of Canada Savings Bonds which will be made available in October.



CLOSURE OPERATIONS on the main dam at Hydro's Joachims development were reaching a climax when photograph was taken. A few days later workmen be to seal off these two remaining sluiceways with concr sending the thundering Ottawa back to its prehist course through the McConnell Lake valley.

ALL-OUT EFFORT REQUIRED

IT IS POSSIBLE that this may be the last fall and winter during which it will be necessary for Hydro to enlist an all-out effort on the part of all consumers in helping to save electricity. By next year, it is anticipated, power supply conditions will have greatly improved as new plants, now under construcion, are completed and placed in service.

This year, however, despite the fact that tremendous progress has been made in augmenting the power resources of Ontario, demands for power have been steadily increasing and Hydro is not yet quite "out of the woods."

Commission Chairman Robert H. Saunders has already enlisted the co-operation of all consumers in helping conserve electricity this fall and winter in order that employment and production may be maintained at a maximum level. At the time of writing, it is expected that restrictions in the use of electricity for certain purposes will become effective October 1. If these restrictions, together with voluntary savings, should meet requirements, it may not be necessary to allocate power to municipalities unless the situation should deteriorate materially due to lack of precipitation, loss of generation, ice trouble or similar causes.

Another important factor with materially affects the power supply situation is rainfall in the right places—in the storage basins that supply the rivers on which Hydro plants are located. In this connection, normal rainfall in these areas during September, October and November is important.

In directing attention to the fact that resources are somewhat greater now than at the same time last year, Mr. Saunders pointed out that power is being purchased from the Polymer Corporation at Sarnia, and the Commission's Stewartville development on the Madawaska River has been placed in service as well as two diesel electric generating sets at Hamilton.

Arrangements have been made also with the Canadian Niagara Power Company for an additional block of power, between 20,000 and 25,000 kilowatts, which will become available in the near future. In addition, Hydro is at present proceeding with the construction of emergency steam plants having a total capacity of from 60,000 to 70,000 kilowatts. It is expected that these plants will come into operation, from time to time, between November 15 and the end of the year.

The hope has been expressed that extension of Daylight Saving Time in Toronto and other municipalities may have a beneficial effect in helping conserve vitally needed power.

On a number of occasions, the Hydro Chairman has expressed the warm appreciation of the Commission for the very fine co-operation received last year from the various Hydro municipalities and consumers. The same kind of co-operation this year in helping save power should enable the people of Ontario to get through the winter with a minimum of inconvenience.

AUTUMN REFLECTIONS

NOTICE anything different about the air these days, An exhilarating tang, a hint of frost? An urge to close the window when you get up in the morning?

That's autumn, the "season of mists and mellow fruitfulness." A time when Nature proudly displays all the hues in her paintbox, presenting a kaleidoscope of colour along the highways and river banks. A few all-too-short weeks when nostrils are assailed by the pungent aroma of burning leaves, and the fragrant wind whips a deep glow into cheeks still tanned from summer vacations.

This is the time for bonfires and corn-on-the-cob, for golden harvest moons, for motor rugs in the bleachers and exultant whoops as the ball sails over for a touchdown.

This is the time, too, for the bittersweet return to school and college—new clothes, new books, new courses, new teachers. Many of those returning to the campus have been Hydroites, on the Commission staff for the summer and, perhaps looking forward to the possibility of permanent employment with Hydro upon graduation.

The tang and invigorating air of the fall season seems to give one and all a renewed zest for the important tasks ahead as we move into the home stretch of 1949.

THEY CAME AND SAW

by
C. G. W. MacIntosh
Hydro News

SEVERAL hundred thousand exhibition visitors can't be wrong!

This year's Hydro display at the Canadian National Exhibition was considered one of the finest at the big annual fair.

Every day throughout the fourteen days of the exhibition, thousands of persons from all parts of Ontario, from other provinces in Canada, and from the United States literally flocked to the Hydro exhibit in the big Electrical Building. They came, they saw and they marvelled.

From every side, words of praise were heard concerning the large-scale models of the Toronto Steam Station and of the Des Joachims power development. Much interest also was shown in the large contour maps on the walls depicting the Ottawa River drainage basin, the Nipigon River drainage basin, the Niagara River and the large map of Ontario.

Colour Transparencies

Other features in the Hydro exhibit commanded attention of the crowds of visitors. These included a rotating series of colour transparencies showing progress to date at power developments such as LaCave, Des Joachims, Chenaux and Pine Portage, now under construction. The many large, coloured and up-to-date photographs of these projects also were examined carefully.

Lovers of art had a pleasant surprise. On one wall was a striking picture of the massive Des Joachims development painted in oils by a new Canadian, Otto Nikolai Grebze, former Latvian artist and art professor. Nearby were large, tinted architects' sketches of the Toronto Steam Station and of the Windsor Steam Station.

Electrified Sketch

The story of Hydro power was graphically told through an ingenious electrified sketch entitled "Your Hydro Behind the Electric Switch." This exhibit portrayed how Hydro power is generated, transmitted and distributed to municipalities, industries, stores, offices, farms and homes.

All four outside corners of the exhibit featured interesting, informative displays. Two of these dealt with Hydro's frequency conversion program now under way. A third corner was devoted to a display on Red Seal wiring, while at the fourth outside corner where the Hydro movie "Niagara the Powerful" was shown, visitors received information concerning Hydro films which are available for showing at club gatherings.

Hand "Mikes" Used

Not only were visitors shown the various features of Hydro's 1949 exhibit—they were told about them. A staff of attendants using hand "mikes" gathered crowds around the scale models and the the contour maps of the river drainage basins, and gave highly informative talks. In the language of the layman, they described Hydro's vast construction program and pointed out how this was contributing to Ontario's continued prosperity by making available more low-cost electrical energy for homes, farms and factories.

The Commission's 1949 exhibit told the story of Hydro at present, and gave a glimpse into the future. The exhibit was considered an outstanding success by all who were privileged to see it.

SCALE MODEL of the Commission's new Toronto Steam Station was a focal point of interest for hundreds of visitors to Hydro's exhibit in the Electrical Building during this year's Exhibition. Chairman Robert H. Saunders and Commissioner Bert Merson of the Toronto Hydro-Electric System are shown discussing features of the new station.



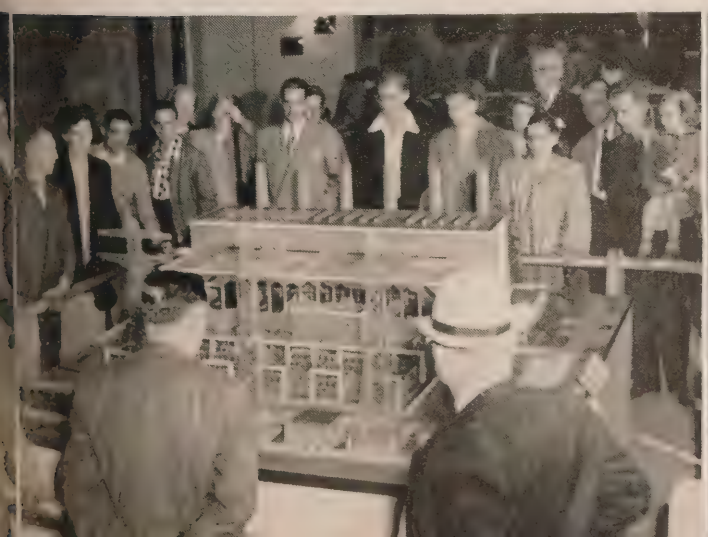




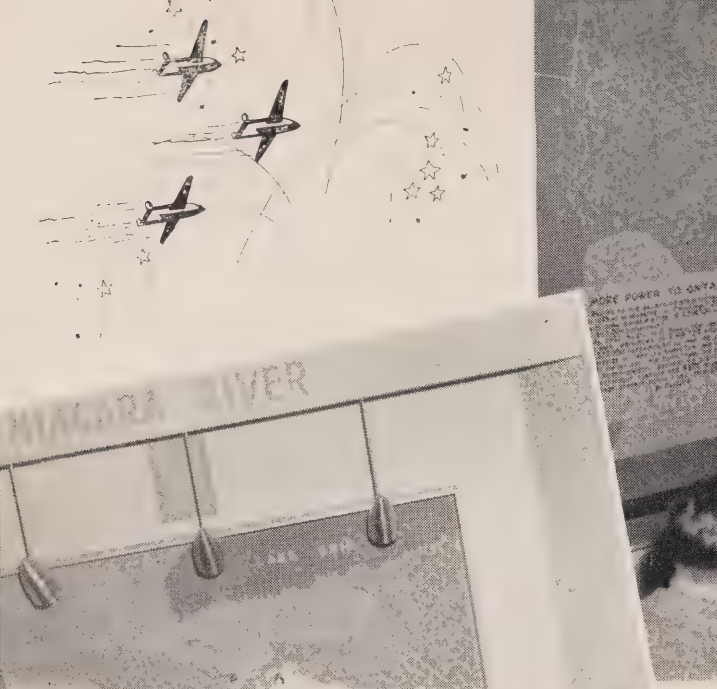
DURING A preview of Hydro's exhibit at the C.N.E. this y
Chairman Robert H. Saunders gave a detailed explanation
the Des Joachims development for the benefit of some of
guests, shown above, grouped around a large scale mode
the project which formed part of this year's interesting disp

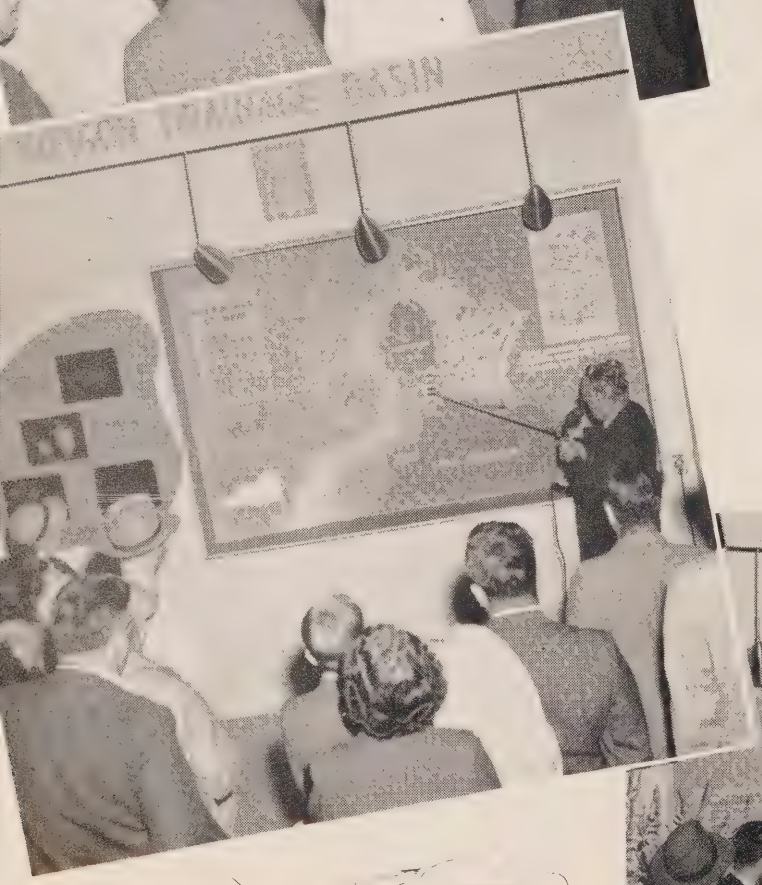
GUESTS AND Hydro representatives, at the preview, shown
the left, including M. J. McHenry, Director of Consumer
vice, H.E.P.C.; W. B. Scott, E. G. Burton, C.B.E., President
the Toronto Board of Trade; R. C Birkenshaw, J. A. B
Manager of Promotion, H.E.P.C., and Controller Leslie Saund
Toronto City Council, examine a model of the new Tor
Steam Generating Station.

THESE PHOTOGRAPHS, below, show typical groups of spectators who visited this year's Hydro exhibit at the C.N.E. in large numbers and displayed interest in the models of the Toronto Steam Station, left, and the Des Joachims development on the Ottawa River, right. These projects, when completed and in operation, will have a total capacity of 558,000 kw. (748,000 hp.)











ABOVE—Interest in new Hydro developments throughout Ontario was accentuated by a brief outline of the new projects indicated on the large map which hung on one wall of the Commission's C.N.E. exhibit.

•

UPPER LEFT—Importance of the Niagara River in relation to the generation of hydro-electric power is explained to this intent audience with the aid of a large topographical map.

•

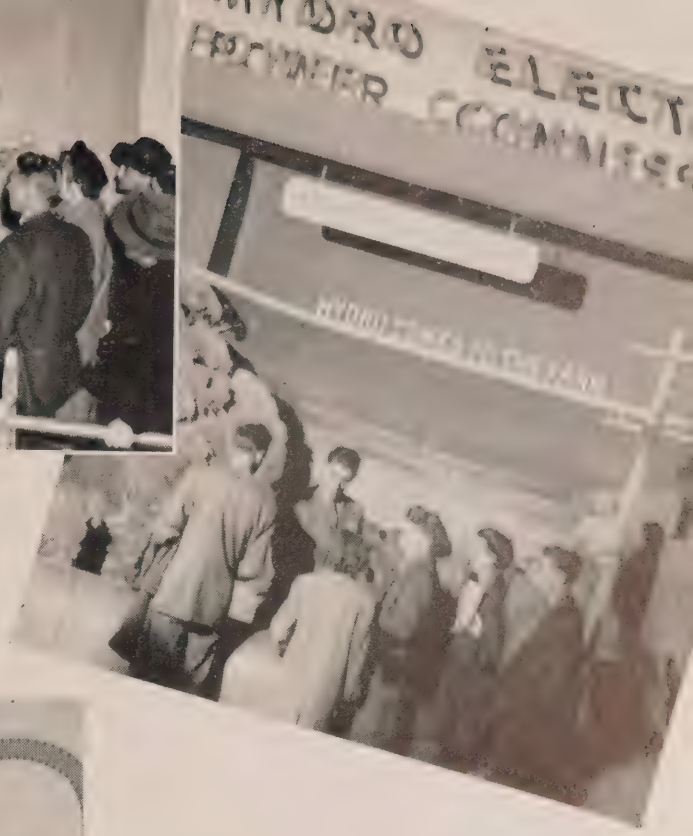
LOWER LEFT—Another group displays keen interest in a map showing the Nipigon Drainage Basin. Hydro has two plants in operation and a third under construction on the Nipigon River.

•

BELOW—Map of the Ottawa Drainage Basin attracts the attention of this group during a brief lecture designed to illustrate the significance of this area where Hydro now has three large power projects under construction.



ABOVE—Illustrating how Hydro power is generated and transmitted to the various classes of consumers, this ingenious electrified sketch, bearing the title, "Your Hydro Behind the Electric Switch!" was another feature of the Commission's exhibit at the C.N.E. this year.



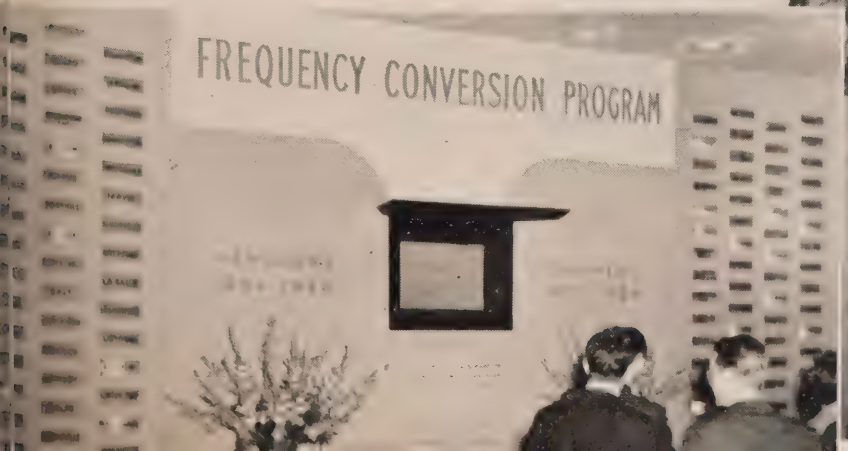


ABOVE—This exhibit in the Ontario Government Building at the "Ex", with "Hydro Comes To The Farm" as its theme, depicted a typical Ontario farm where electric power is playing an increasingly important role.

LEFT—Hydro colour films are available to clubs, school groups and other educational organizations. Produced by Hydro's Promotion Department, these films were advertised and shown in one section of the main exhibit.

BELOW—Importance of "Red Seal" Adequate Wiring, one of the main projects of The Electric Service League of Ontario, was stressed in this display which formed a part of the Hydro exhibit and aroused considerable interest.

BELOW—Another section was devoted exclusively to Hydro's Frequency Conversion Program. Conversion timetable was indicated by lights which flashed on under names of municipalities as year in which they were scheduled for change-over appeared on screen in centre.





44,500,000,000 KILOWATT HOURS



Copyright by Karsh

IN view of the fact that widespread interest has been expressed in the recent keynote address delivered by Robert H. Saunders, C.B.E., K.C., Chairman of The Hydro-Electric Power Commission of Ontario, before Directors of The Canadian National Exhibition, Hydro News is publishing the text in full as a service to the many readers who have been making enquiries. The address was delivered on Automotive and Electrical Day at the C.N.E. It was a significant and historic occasion for this year marked the first time on which the electrical industry of Canada has been accorded the distinction of being spotlighted by the C.N.E. on a special day. On that occasion, Mr. Saunders was speaking not as the Chairman of Hydro but as the representative of the electrical industry which has been making an increasingly important contribution to the progress, prosperity and happiness of the people of Canada. Mr. Saunders' address follows. — The Editor.

TO-DAY it is my great privilege to represent the whole Canadian electrical industry from the harnessing of the great power of falling waters and the generating of power from steam to the use of that power by consumers in factories and homes by means of appliances made available by our Electrial Manufacturers. On behalf of this great industry may I express to you, Mr. President, and your and my fellow directors of this great exhibition, our sincere thanks for identifying one of your days with our Industry. I believe such a recognition is fit and proper as this country and the whole world owes much to those who have brought to us the great benefits of electric power.

Sixty Years of Progress

The peoples of the world owe a great debt of gratitude to men like Faraday who back in 1831 discovered electromagnetic induction which marked the beginning of the developments which were to bring a new and wonderfully flexible power to the service of mankind. It was not, however, until the invention of the polyphase alternating current by, I believe, Nikola Tesla of the Westinghouse Company in 1888 that the transformation of electrical energy into mechanical work became commercially practical. What great progress was made during the following 60 years. Today there is no more important raw material than electric power. Canada today owes its high standard of living and its great industrial production to the more than 11,570,000 horsepower of installed capacity in Canadian hydro-electric and steam generating plants.

Nowhere in the world is the standard of living higher than in Canada, brought about in no small measure by the fact that here, with a population of only 13,000,000 we produce yearly over 44,568,000,000 kilowatt hours of electric energy. Compare this with our great neighbour to the south. The production in the United States is approximately 282,594,459,000 kilowatt hours yearly with a population estimated at 145,340,000. In Canada we produce 3,428 kilowatt hours for every man, woman and child compared with a per capita production in the United States of 1,944 kilowatt hours. Canada's per capita production, in other words, is just about double that of the United States.

What effect has the building up of these 44,500,000,000 kilowatt hours had upon our Canadian way of life?

What we had of industrial life has been revolutionized—but the new kilowatt hours over the years have changed Canada from an agricultural nation into one of the foremost industrial nations.

Life on the farm has lost its drudgery and Johnny is being persuaded to stay on the farm because electricity does so many things for him. It pumps the water; it milks the cow; it cools the milk, separates the cream and churns the butter; it grinds the grain, incubates the chicks, takes care of the brooder and the hotbed. In short, it has become the farmer's most valued hired hand.

Drudgery Removed

In both rural and city homes electricity heats water, makes ice, runs the radio, tells the time, controls the furnace, conditions the air, heats our beds, freezes ice cream, ventilates the kitchen, refrigerates our food, washes dishes and clothes. It irons the clothes, mixes our food, cooks and bakes, rings bells, cooks waffles, boils eggs, makes our coffee and toasts our bread at the table, extracts fruit juices, vacuum cleans our house, massages our face and scalp, dries and curls hair, grinds the meat and runs the sewing machine. No other discovery compares with electricity in bearing man's and woman's burdens and removing the drudgery from life.

Electricity is indispensable to Canada—What does our present generation of 44,500,000,000 kilowatt hours mean in actual manpower? Authorities agree that a normal, healthy man without any assistance from power equipment, can average about the equivalent in working energy of three-quarters of a kilowatt hour each eight-hour day. If he worked 300 days a year, his normal annual output, electrically speaking, would amount to approximately 225 kilowatt hours. Therefore, to equal the working energy represented by Canada's 44,500,000 kilowatt hours, more than 197,000,000 workers would be required. At $5.00 per worker per day, it would cost us about $300,000,000,000 a year.

This seems fantastic but much of the work that electricity is doing to-day would seem fantastic too, if we had not become accustomed to it gradually. We recognize that electricity is not the only power outside of man's own naked energy, but where other types of power are used in production processes, electricity is usually used for regulation and control. Without it, with probably some rather violent adjustments, we might get along in a way, but we should revert to a strictly agricultural economy and Canada would soon lose the position that, in spite of its relatively small population, it holds as one of the leading nations of the world.

Great Employer of Labour

Paradoxically, in a way, but with almost self-evident truth, those 44,500,000,000 kilowatt hours I have been refering to are a great employer of labour—although, fortunately not in the titanic scale that would be necessary to actually substitute them by manpower. The use of all this electricity in production or consumer services naturally calls for a very large number of men in factory and in office and in jobs altogether outside the sphere of the electrical industry. And that is one of the reasons why labour in our country—and very definitely in Ontario, as I know from personal experience, has co-operated so well with the power producers. They realize, too that the increased use of electricity means better working and living conditions and often better pay.

Of course, you must make electric power available to the varied uses of consumers. Those 44,500,000,000 kilowatt hours of electrical energy supplied by Canadian power stations were brought into actual working use through equipment and appliances furnished, in a large part, by Canada's Electrical Manufacturing Industry which now employs some 53,000 persons and holds fifth place among the industries of the Dominion.

While complete figures on the output of this industry are not readily obtainable, estimates supplied by the Canadian Electrical Manufacturers Association suggest a minimum of $400,000,000 as the value of the output for 1948, while a production valued at approximately $560,000,000 is anticipated for this year. Available statistics show that in Ontario alone nearly $268,000,000 was expended upon electrical equipment in 1947—an increase of more than 50 per cent over the outlay in the previous year.

Perhaps it would not be out of place to mention here, that Ontario Hydro, whenever and wherever possible supports home industries. For example, our total purchases for the fiscal year 1948 amounted to $74,989,674—96.5 per cent of this amount was spent in Canada, leaving only 3.5 per cent spent in the United States and the United Kingdom. In our $500,000,000 post-war construction program, many, many millions of dollars are being spent in Canadian factories.

Fundamental to the use of electrical equipment and appliances is the provision of power, and I shall endeavour to touch briefly on the situation in this respect.

As you know, practically all the electricity used in Ontario and Quebec is derived from waterpower developments. The picture is changing a little in Ontario due to the unprecedented demand for power in the heavily industrialized southern area of the Province. I shall speak about that in a moment. But what I want to point out is that Canada in large measure owes its present prosperity to the development of its waterpower resources in which Ontario Hydro was a pioneer. From steam-electric plants using imported coal, it would have been impossible to have supplied growing industries with power at a cost they could bear and there would have been no industrial development on the scale we witness today.

Electric Power and the Future

At the end of 1948 there was a reported installed capacity of more than 10,870,000 horsepower in Canadian hydro-electric generating stations, supplemented by approximately 700,000 horse power in steam-electric plants—a present installed total capacity of more than 11,570,000 horsepower. Yes, gentlemen, Canada's industrial development, her high standard of living in the cities and on the farms can be summed up in but a few words — **cheap electric power in abundance.**

What of the future? If our industrial expansion is to continue, if manufacturers are to be persuaded to locate plants in Canada, then there is one great need—it still is—**cheap electric power in abundance.** It is for that reason that in almost every Province, great programs are under way in the enlargement of present or the construction of new generating stations.

The potential waterpower resources of Canada suitable for economic turbine installation are variously estimated at between 40,000,000 and 52,000,000 horsepower. If we accept even the lower figure, we can say that no more than about 27 per cent of the total hydro electric resource has been developed to date. Dominion Government statistics tell us that new plant construction representing approximately 3,000,000 horsepower in station capacity is now being carried out in Canada including Newfoundland. Nearly half of this total is being undertaken by our own Hydro-Electric Power Commission of Ontario to meet the phenomenal increase in power demand by all clases of consumers in this Province at a cost of about half a billion dollars. Some 210,000 horsepower has already been installed and placed in service. More than double that amount of new power will be made available next year and the year after, and in 1952 we hope to complete our present construction program.

I referred earlier to the power picture changing a little in Ontario due to the tremendously increased demand for power in the southern areas. I did not mean to suggest, however, that hydro electric resources are nearing exhaustion in this province. Apart from the St. Lawrence and further possibilities at Niagara there is a great potential reserve in our Northern rivers, and we intend to develop this resource as conditions permit.

In order, however, more adequately to meet increased power demands during

(Continued on page 33)



BRITISH ENGINEERS VISIT ONTARIO

WHILE IN ONTARIO for talks with H.E.P.C. officials recently, V. Alex Pask (right), Chief Engineer, and D. Clark (left), Generation Engineer of the British Electricity Authority, paid a visit to Hydro's Queenston-Chippawa development. These eminent British engineers are shown above with R. L. Hearn (centre), General Manager and Chief Engineer, H.E.P.C.



MEET ROSANNE C. Richardson (inset) Head Receptionist, Niagara Region, surrounded by her comely guides. From left to right they are: Pat Armstrong, Joan Dixon, Beth Fluhrer, Audrey Bracken, Tanis Kell, Doreen Kimber, Ruth Manning and Janet Webster.

Hydro's "Girl Guides"

GENERALLY speaking, pulchritude and penstocks are not closely associated. But an exception should be made in the case of the Queenston-Chippawa Generating Station, Ontario's largest power plant, which is believed to be unique in having lady guides on its staff.

Smartly uniformed in hunter's green and cream, the eight girls are reported to be doing an outstanding job of conducting tours through the half-million-horsepower plant, explaining the various processes by which electricity is generated, and answering the many questions posed by visitors.

In inaugurating the girl guide service, Hydro is pursuing a policy initiated by the employment of young ladies in construction camps—a policy of employing intelligent, attractive girls wherever such employment is feasible and advantageous. In the case of the Queenston guides, this policy seems to prove beyond a doubt that the world of turbines and transmission towers is not restricted exclusively to members of the male sex.

SPECIALLY selected for their appearance, affability, poise, and comprehension of mechanical operations, the girls are trained for their job verbally and by means of handbooks and diagrams. After about a week of "going the rounds" with an experienced guide, they are ready to start out on their own, thoroughly familiar with their subject and able to talk with assurance about the plant and its history, Hydro history in general, and other Commission developments.

Each girl makes from 12 to 16 tours a day, the tour lasting about 45 minutes. An average group of visitors consists of 16 persons. Each member of the group is presented with a coloured button, which doubles as a souvenir and a means of keeping the group together.

At the beginning of the tour, the visitors meet in the attractive peach-coloured reception room, where they are asked to register in the guest book. This book is an interesting object in itself, containing over 350,000 signatures, some of them belonging to royalty, high dignitaries, and distinguished engineers from all parts of the world.

Eight Young Ladies Reported Doing An Excellent Job Of Conducting Visitors Through Queenston-Chippawa Station

After the showing of the technicolor film, "Niagara The Powerful," the group moves into the elevator, is whisked down a distance of 212 feet, and emerges into a marble-lined tunnel which leads to the "working portion" of the plant. Tunnel and elevator shaft were cut through solid rock, contrasting with the rest of the powerhouse, which was built on the face of the cliff overlooking the 300-foot Niagara gorge.

Guide Service Popular

Officials report that the lady guide service has proved very popular indeed. Further evidence of this comes from numerous letters and complimentary comments the Commission has received, as well as from the growing attendance at the tours. This year, up to the end of July, the number of visitors to the plant totalled 27,000, an increase of some 10,000 over the same period of last year. Average daily attendance during July of this year was 221.

In addition to their regular tours, the girls are often called upon to conduct special groups around the Queenston plant. Recent visits to the station include those made by a number of Boy Scouts, an English soccer team, the Royal Marine Band, and a group of English boys on a

trip to Canada sponsored by Garfield Weston.

At the head of the guide service is Rosanne C. Richardson, head receptionist for the Niagara Region. A graduate of the University of Toronto, she has taken a post-graduate course at Cornell University in Instructional Methods in Technical Subjects, a course which she feels has helped tremendously in her present position. Having joined the Commission last January, Miss Richardson, under the direction of Alex. DeMaio, Regional Personnel Officer, is immediately responsible for organizing the guides and placing the tours on a smooth-running basis.

The eight friendly, pleasant guides are for the most part university students or university entrants, ranging in age from 18 to 20. Four are natives of Niagara Falls—Joan Dixon, Pat Armstrong, Audrey Bracken and Beth Fluhrer. Janet Webster hails from nearby Niagara-on-the-Lake and Ruth Manning from Grimsby, Tanis Kell from Thistletown, and Doreen Kimber from St. Catharines. A reserve staff of two—Dorothy Barnett and Phyllis Turner, both of Niagara Falls—is on duty on weekends and on extra busy days. In addition to her guide duties, Joan acts as a "pinch-hitter" for Miss Richardson on the latter's day off.

Prepare For "Posers"

Indication of the girls' interest in their work is given by the way in which they spend much of their spare time. A great portion of it is spent in the plant, watching the operations and examining the equipment actually in use. In this way they gain much technical information which proves invaluable in dealing with "posers" put to them by visitors.

Working on alternating shifts, Miss Richardson and the guides are on the job eight hours a day, six days a week, including Saturdays, Sundays, and holidays. The guide service will be continued through the fall and winter though there will probably be changes in the personnel. During those seasons, when it is expected that there will be a drop in attendance at the tours, the guides may be called upon to address schools, ladies' societies, church organizations, and other special groups.

All in all it is felt that the lady guide service is proving highly successful in helping visitors from all over the world to become better acquainted with the operations of Hydro, and in particular the Queenston-Chippawa Generating Station.



RUTH MANNING (above), one of the guides at the Queenston-Chippawa Generating Station, explains some interesting facts about a turbine runner. In the lower picture, Guide Joan Dixon is taking members of His Majesty's Royal Marine Band from Portsmouth, England, through the long tunnel at the plant. Members of the Band are shown here in "mufti" with the Band Director, Major F. Vivian Dunn, M.V.O., in the foreground.



CHIPPAWA

by
C. G. W. Macintosh
Hydro News



RICH in historic reminiscence, the incorporated Village of Chippawa, situated at the mouth of the Welland River three miles above the falls of Niagara, is a municipality of pleasing contrasts. In this community, the old and the modern trends of living are delightfully blended.

In the centre of the municipality is the old-fashioned village square, where residents of the community frequently assemble for band concerts, presentations, services of dedication and other public meetings. By contrast, the village has more miles of paved streets than most small centres and a most modern street lighting system. There is also a unique fusing of modern types of residences with some architectural gems of another era.

NEXT year will be an important milestone in the long history of Chippawa. In 1950, Chippawa will mark its centenary, having been incorporated as a village in 1850.

The village is one of the most patriotic communities in Canada. When the call to arms was sounded in September, 1939, for the defence of Canada and the British Commonwealth, there was an immediate response from Chippawa, many of her sons and daughters volunteering at once. During World War II, one sixth of the

(Continued on page 14)

LEFT—One of the architectural gems of an earlier period is this beautiful Chippawa residence.

BELOW—Chippawa village square. Memorial bandstand on the right was erected in honour of the village's war heroes.



RIGHT—At a typical Well-Baby Clinic Nurse Elsie Schuman is seen weighing Sandra Irene Shisler, as the infant's mother, Mrs. Howard Shisler, and Dr. G. W. West, clinic doctor, look on.





BELOW—One of the four rooms provided for the clinic has many types of toys to amuse children while waiting for their examinations.



ABOVE—This spacious building on the Norton Company grounds at Chippawa was used as a plant dormitory and recreation centre during World War II. The company has granted space in the building for the Chippawa Well-Baby Clinic, and Boy Scout meetings. Teen-age groups also hold their Teen Town socials and dances in the spacious concert hall.

BELOW LEFT—One of the most historic buildings in the village is this lovely old dwelling, where Laura Secord, famous heroine of the War of 1812-14, lived for several years before her death. This famous Canadian also conducted a private school in this house.

BELOW RIGHT—Developed by the Chippawa I.O.D.E., this modern library serves the educational and cultural requirements of the villagers, both young and old.



LEFT—Members of the Chippawa Hydro Commission from left to right are: Marvin Misener, Superintendent; Robert T. N. Callan, Secretary-Treasurer; Cyrus Flommerfelt, Chairman, and Reeve George Bukator. Ex-Reeve Edward Weightman, not shown, is also a commissioner.



CHIPPAWA

(Continued from page 12)

population, the flower of Chippawa's manhood and womanhood, served in the armed forces.

Chippawa joined the Hydro family of municipalities in 1922. The system is entirely free of debt—all its debentures were paid up ten years ago, in 1939. Another important feature, of which the Chippawa Hydro-Electric Commission is justly proud, is the fact that residents pay their electric bills promptly and there have been no arrears since July, 1945.

The total power load has grown steadily since 1922 when the Chippawa Commission took over the operation of the system. In that year, the total load was 112 kilowatts (150 hp), while today the load is 381.7 kilowatts (508 hp). There are 3.25 miles of transmission lines in the area served by Hydro. The Chippawa Hydro system has one substation and there are 480 consumers, made up of 425 domestic, 50 commercial and 5 industrial users.

Although the Chippawa Hydro staff is small—consisting of two men, Marvin Misener, superintendent, and Robert T. N. Callan, municipal clerk, who is the commission's secretary-treasurer—it is highly efficient.

Cyrus Flommerfelt, Hydro chairman, claims that Chippawa with a population of 1,504 citizens, has the best lighting system of any community of its size in Canada. He proudly points to the modern street lights that illuminate so well that it is as easy to read on the streets at night as in the daytime.

Chairman Flommerfelt, who has served on the Chippawa Hydro-Electric Commission since 1931, is a retired Ontario Hydro employee. He worked for The Hydro-Electric Power Commission of Ontario for 27 years at the Ontario Power Plant and the Queenston Plant. He is a member of the Hydro Quarter Century Club.

Heroism Recognized

Reeve George Bukator, a commissioner, is considered one of Chippawa's bravest citizens and greatest heroes. On two different occasions he has risked his life to save youths from drowning. The first heroic rescue occurred on May 24, 1938, when he plunged into the Welland River and pulled three struggling boys out of the clutches of the swift, treacherous currents of the river.

The second rescue feat in May, 1944, was daring and spectacular. With another Chippawa man, Alvin Chedore, the courageous Bukator defied the powerful currents and rowed in a small rowboat almost to the middle of the broad Upper Niagara River, less than two miles above the roaring cataracts, to snatch three lads from a fragile home-made raft and certain death over the Falls. For these brave deeds, Reeve Bukator received the highest possible awards, the Carnegie Life Saving Medal, the Royal Humane Medal and a parchment.

The other commissioner is Edward T. Weightman, a former reeve for two years and councillor for seven years. He has served four years on the Chippawa Commission, two years as Chairman. His family long has been prominent in the public affairs of Chippawa, his father having served for years on the municipal council as councillor and as reeve.

Principal industry in Chippawa is the Norton Company, a heavy user of power, the electrical load for the plant being approximately 40,000 kilowatts. It is reported to be the largest plant in the world manufacturing crude abrasives. This factory employs 750 persons, most of whom are residents of Chippawa. And several members of the Norton staff have played prominent roles in the public affairs of the village, serving on the Board of Education and the Municipal Council. A number of these have had the distinction of being reeve.

Indeed, much of the activity of Chippawa centres around the Norton Company. The company erected a huge hall on its grounds which was used as a plant dormitory and recreation centre during World War II. The Norton Company has granted use of space in the former dormitory building for the Chippawa Well-Baby Clinic, having fully equipped four rooms for this purpose. One large room is completely furnished as a nursery playroom and is filled with interesting toys for little boys and girls. Here the small children play happily while waiting their turns to be checked by the doctor engaged by the village and the nurses of the Victorian Order of Nurses. Other rooms serve as offices for weighing the infants and giving them inoculations, and for counselling service.

The Norton dormitory hall also serves as a meeting place for the Chippawa Boy Scouts, and the teen-age groups of the village hold their Teen Town get-togethers and dances in the spacious concert hall of the building.

In addition to the Norton Company there are several small industries in Chippawa. These are: the Kaumeyer Paper Products; E. Weightman & Sons, lumber mill and wood products; Empire Novelty Company; Leather Specialties Company and the Mixed Concrete Company.

Splendid Public Library

The educational and cultural needs of the residents of Chippawa are well provided for through the splendid public library which the Chippawa I.O.D.E. has developed. The library is located in a neat, frame building which once served as offices for engineers and construction heads of The Hydro-Electric Power Commission of Ontario during the building of the Chippawa-Queenston power canal. Members of the I.O.D.E. revealed that the Chippawa library was started when the former office building was moved away from the banks of the Welland River and was given to their organization by the Hydro, 27 years ago. The library is well stocked and contains a wide variety of books for young and old. It is said to be one of the most complete and largest libraries in any village of its size. Members of the I.O.D.E. take turns in serving as librarian on the two days each week that the library is open. They also select and purchase the books.

Chippawa is intimately connected with Hydro. It is in the river that runs through the heart of the village that the important Chippawa-Queenston Power Canal has its source. This stream, the Welland River, feeds Hydro's huge Queenston generating plant with the

(Continued on page 23)

Hanover Superintendent Passes

Suffering a heart attack while holidaying in Brantford, HERMAN S. N. DENEF, aged 50, prominent Hanover citizen and Superintendent and Secretary-Treasurer of the town's Public Utilities Commission, passed away suddenly on August 18.

Born in Brant Township, Bruce County he was educated in Hanover and became associated with Hydro in 1920 as a lineman, meter reader, and general routine man with the local commission. In 1925 he became Superintendent, and three years later was appointed Secretary-Treasurer. In 1933 he was given the same office in the newly formed Georgian Bay Municipal Electric Association, retaining that position when the Association became District No. 2, O.M.E.A.

At the time of his death, Mr. Denef was president of the Hanover Chamber of Commerce, superintendent of the Lutheran Sunday School, director of the choir, member of the Swing Bowling Club, and member of the Hanover Musical Society, of which he was past president.

Surviving are his widow, the former Bessie Brant, whom he married in 1923, and four daughters, Nadine (Mrs. Don Dahmer), Ruth (Mrs. Roy Weaver), Pamela, and Susan.

Mr. Denef's position as Superintendent has been taken over by Verne Snider, while Harry Mann succeeds him as Secretary-Treasurer.

NEW STAFF CARS

Windsor Public Utilities Commission recently authorized the purchase by tender of three new staff cars for the Hydro division. These will replace cars that have been in service since before the war.







ABOVE—This attractive building houses the Norton Company laboratory. A competent staff of research engineers has been provided with the latest type of research equipment.

UPPER RIGHT—Chairman Cyrus Flommerfelt, left, and Secretary-Treasurer Robert Callan, Chippawa Hydro Commission, are seen in an informal pose with Superintendent Marvin Misener.

CENTRE RIGHT—Ronald Frier, left, and Angus Phillips, shown beside one of the large presses at the Kaumeyer Printing Company plant are seen here. This printing company is one of the oldest in the area.

BELOW—Spanning the Welland River, this traffic bridge joins the east side of Chippawa, with the west side. The village lies along both banks of this waterway.

LOWER RIGHT—Ex-Reeve Edward Weightman was hard at work in his lumber milling plant in Chippawa when this picture was taken. He is the third member of the Chippawa Hydro Commission and has served four years.







TUNNEL



Work At Spectacular Mississagi River Project Past Half-Way Mark — 100,000 Yards Of Concrete Already Poured

by
John A. Murphy
Hydro News

TUNNEL, Hydro's Mississagi River Development near Thessalon, is one of the most spectacular of the Commission's projects.

The main dam at Tunnel will be the highest ever built by Hydro for a power development — rising to a maximum height of 235 feet above the river bed. It is being constructed in a setting of natural grandeur where the tumultuous waters of the Mississagi surge for several miles through a precipitous gorge of beetling rock—the "Tunnel" from which the project draws its name. The harnessing of the river waters at this point will realize the development of 42,000 kilowatts (56,000 hp) to serve growing demand in Northern Ontario. Power developed will serve the Sudbury, Nipissing, Timiskaming and Abitibi districts of the Northern Ontario Properties and will also be conducted by submarine cable to Manitoulin Island.

Upon the occasion of our visit, construction at Tunnel was past the half-way mark. Nearly 100,000 cubic yards of concrete had already been poured into the main dam and the great structure was taking shape between the cliffs. When completed, this dam will seal off the Tunnel and create an artificial lake extending twelve miles above the dam. Already bridging the chasm is the Bailey Bridge conveyor trestle. As we stood far below in the "cut"—the popular term for the powerhouse excavation — the workmen at the top of the structure were silhouetted like Lilliputians against the sky. It is only when standing in this vantage point that you appreciate the height from the top of the dam to the floor of the excavation. Down in the cut, helmeted workmen were busily engaged on the tasks preceding the concrete-pouring operations for the powerhouse. Some were operating chattering steel drills that bored into the rock; others were loading the steel buckets of overhead cranes with loose rock.

In addition to the approximate 100,000 cubic yards of concrete poured into the main dam, 8,000 cubic yards have gone into the side dam and 3,000 cubic yards into the sluiceways structures. When completed the main dam will stretch across the river for 1,000 feet. It is estimated that 440,000 tons of concrete will be required in building the dam, penstocks and powerhouse. The excavation for the structures and sluiceways necessitated the excavation of 330,000 tons of rock—a major job in itself, now practically completed.



One of the features of the Tunnel Development is its compactness. All the salient features of its construction are, in a manner of speaking, right at the observer's fingertips. With very little shifting of the point of observation, it is possible to see the intake of the 900-foot diversion tunnel, the upstream face of the dam, and the sluiceways, above and to the left of the upstream face. From a vantage point on the cliff below the power site, an excellent view is obtained of the outlet of the diversion tunnel, the general activity on the down stream face of the dam and the work in the powerhouse excavation. During the construction of the dam and powerhouse the tunnel is diverting the entire flow of the Mississagi around the construction area. Upon completion of the job, the Tunnel will be closed off by steel gates and then sealed with concrete. This is the same method that was followed in the construction of the Stewartville Generating Station on the Madawaska River.

Construction of the Tunnel Development is being carried out by the Rayner Construction Limited in co-operation with Hydro engineers. There are approximately 700 men in camp employed on the job and they are quartered in comfortable and well-appointed living accommodation.

VELOPMENT



A well-equipped cafeteria under the supervision of the catering firm of Crawley and McCracken Limited has a seating capacity of 550. One of the recreational features of the summer months is the showing of outdoor movies on a specially constructed plywood screen.

Rocky Island Lake

No story about the Tunnel would be complete without reference to another project being pushed ahead 50 miles farther up the Mississagi at Rocky Island Lake. Here the control dam for the storage area will be located. This job calls for the building of three side dams as well as the main control dam and the clearing of 12,000 acres of land.

The only access to the Hydro camp at Rocky Island Lake, apart from seaplane, is by automobile on the one road up along the river's edge. We were informed that much of the trucking in of equipment and material was done last winter when the packed-down snow made a reasonably passable road surface. Nonetheless, winter or summer, the trip from Tunnel to Rocky Island Lake is fifty miles of pretty rugged driving, and calls for judgment, skill and determination on the part of drivers and transport crews.

One of the compensating factors of the drive, however, is the impressive scenery encountered en route. The road for nearly all of the way follows the banks of the river and passes through the Provincial Government's Mississagi Forest Reserve. There are places where the road climbs along the faces of cliffs hundreds of feet high on the one side with a sheer drop of 40 or 50 feet to the water on the other.

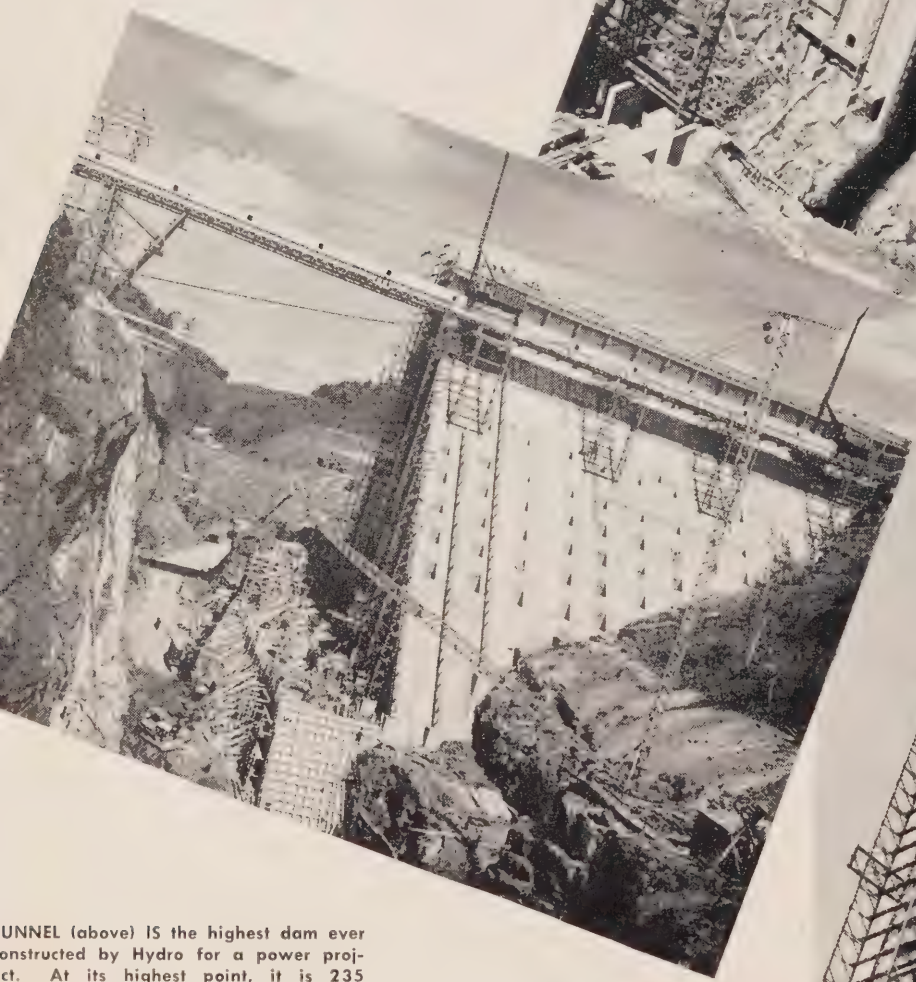
When the road leaves the river and plunges through the forest the prospect is not so pleasing. Then the traveller sees the charred and blackened skeletons of once splendid forests destroyed by the

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THIS VIEW, (below) taken from the cliff below the concrete mixing plant, shows the progress being made with the main dam which is now nearing completion.

THIS RATHER (above) disturbing angle was obtained by pointing the camera through an aperture in the floor of the concrete conveyor trestle. At this point we are looking nearly 250 feet straight down.



UNNEL (above) IS the highest dam ever onstructed by Hydro for a power proj- ct. At its highest point, it is 235 eet above the solid rock. This view from below the construction site shows the rocky course of the river framed by the dam and concrete conveyor.



ILHOUETTED AGAINST (right) the summer sky, the partially completed section of the main dam looms dramatically overhead from our camera's vantage point in the powerhouse excavation.

TUNNEL DEVELOPMENT

(Continued from page 17)

es that ravaged the area last summer. housands of acres of trees were destroy- , the fire burning right through the esent camp site at Rocky Island Lake. he desolate spectacle is a grim warning ainst carelessness to all who are employ- or who seek holiday recreation in ntario's wonderful northland.

Approximately 700 men are engaged in e clearing and construction operations Rocky Island Lake. In charge of the nstruction here is E. J. Coleman of the ommission's Construction Division, with E. Mackie the superintendent in charge clearing operations.

The construction program calls for the ilding of a control dam and two side ms at Rocky Island Lake with a third m at Round Lake, about seven miles stream. This will provide an ultimate ter storage area of about 300,000 acre- et. The control dam will require the cavation of 8,000 cubic yards of rock d the pouring of 15,000 cubic yards of concrete. The three auxiliary dams will be constructed of earth fill reinforced by steel sheet piling cut-off walls sealed to rock.

The clearing for the storage area involves nearly 12,000 acres. When the trees are felled they are cut into logs, 16 feet 6 inches long and 6 inches minimum across the tops, to be sold as merchantable timber.

It is expected that the work at Rocky Island Lake will be completed early in the spring of 1950, tying in with the scheduled completion of Tunnel later in the same year.

LONG-BURNING LAMP

• Believed to be the world's longest-burning electric lamp, a new tiny glow lamp has been introduced by General Electric in the United States. Used in household appliances and other electric equipment, the new lamp will produce a small amount of light for more than 25,000 hours, according to company engineers.

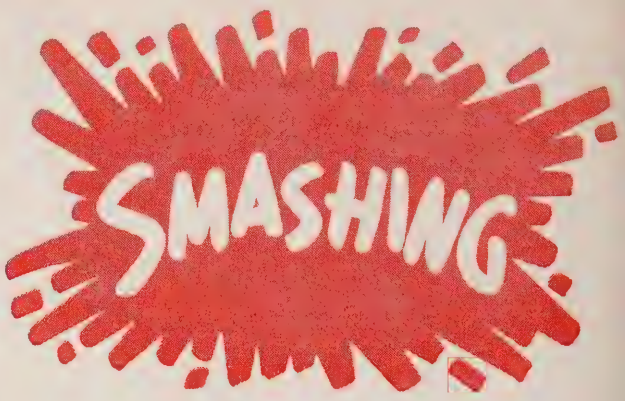
Closely related to the work on the Mississagi are two other Hydro construction jobs, being carried out in the area between Thessalon and Sudbury. In the rugged bush and timberland that characterizes Lake Huron's northern shore line, construction crews are pushing ahead with the building of a 110,000-volt transmission line that will eventually traverse the 125 miles from Tunnel to Sudbury carrying 60-cycle power from the new generating station. At Sudbury, the line will terminate at a Frequency Changer Station now in the process of construction.

The site of the new station is a 24 acre tract of land at Garson on the outskirts of Sudbury. The main building that will house the frequency changing equipment is now nearing completion and the entire project is scheduled for completion in the fall of this year. Sudbury's Hydro consumers all use 60-cycle power with the exception of heavy industry which operates on 25 cycle. Power will be transmitted from Tunnel at 60 cycle and will be changed to 25 cycle as required. Thus this new station in Canada's Nickel City will be one of the key power distribution centres in the northern part of the Province.



PAYING TRIBUTE to the memory of the late Sir Adam Beck on the 24th anniversary of his death is this group shown in front of his monument on University Avenue, Toronto. Left to right, H. J. McTavish, Secretary, Toronto Hydro; MacDonald White and Bert Merson, Toronto Hydro; G. F. Aram, H.E.P.C., representing the Hydro Branch of the Canadian Legion; Robert H. Saunders, Chairman, H.E.P.C.; R. L. Hearn, General Manager and Chief Engineer, H.E.P.C.; George Weale, Toronto City Clerk, representing Mayor H. E. McCallum; Dr. Otto Holden, Assistant General Manager—Engineering, H.E.P.C.; H. R. Morris, H.E.P.C., representing the Hydro Club; H J Thornton, H.E.P.C., representing Hydro Branch of the Canadian Legion.

NIAGARA FALLS



by
John A. Murphy
Hydro News

BRITAIN'S fifty school boys who visited Canada during August as guests of Canadian industrialist, Garfield Weston, were introduced to the scenic wonders of Niagara Falls and the consensus of opinion among them was that the whole place was "smashing." There were more specific views expounded by some of the older members of the group, of course, but the general impression seemed best expressed by the description of the more youthful element.

The lads arrived at the Falls by bus from Toronto and started on a complete tour of the points of interest. After a trip on the doughty "Maid of the Mist" around the bottom of the Falls, the party visited Table Rock and then had a luncheon at the Park Restaurant above the Falls.

Ask Many Questions

HIGHLIGHT of the program was an inspection of the Ontario Hydro's great Queenston-Chippawa Generating Station at Queenston. There, the boys were conducted through the plant, one of the world's largest, by the smartly uniformed guides who are hosts to thousands of visitors throughout the year. While the young ladies have an amazingly thorough understanding of the function and workings of the vast structure, some of the queries posed to them by their alert young listeners called for very detailed answers. Once again a poll of opinion on the general impression of the generating station and the guides seemed to find "smashing" by far the most popular adjective.

After visiting Fort George at Niagara-on-the-Lake, the party were guests of the Hydro at dinner in a beautiful dining room atop the famous General Brock Hotel. They were officially welcomed on behalf of the Commission by M. J. McHenry, Director of Consumer Service, who then introduced Mayor William Houck, M.P., to extend the official civic greetings of the City of Niagara Falls.

Guest speaker was Louis Blake Duff of Welland, well known newspaper publisher and historical authority of the Niagara Peninsula. Mr. Duff gave a brief sketch of Niagara's historical background, relating how Governor John Graves Simcoe held the first Parliament of Upper Canada at Niagara-on-the-Lake in 1792. The speaker concluded his remarks by pointing out to his youthful audience that the 135 years of peace between Canada and the United States that began after the War of 1812 was an example of good neighbourliness between nations that the rest of the world would do well to follow.

C. B. Cowley, director of the visiting party, introduced the three leaders, A. E. Wilson, Eton Manor Clubs; J. C. Griffiths, Macclesfield, and Dr. J. W. E. Mark, Paddington. At the same time Mr. Cowley expressed warm appreciation to the Commission for the courtesies which had been extended to the boys. Two of the lads, David B. Read of Weymouth and Christopher Minter of Bosham, were accorded rousing ovations for their fine expressions of thanks for the opportunity which had been accorded to the boys to see the Queenston-Chippawa plant and other points of interest in the Niagara area.

Immediately following dinner, the coloured Hydro film "Romance of a River" was shown in a private screening room.

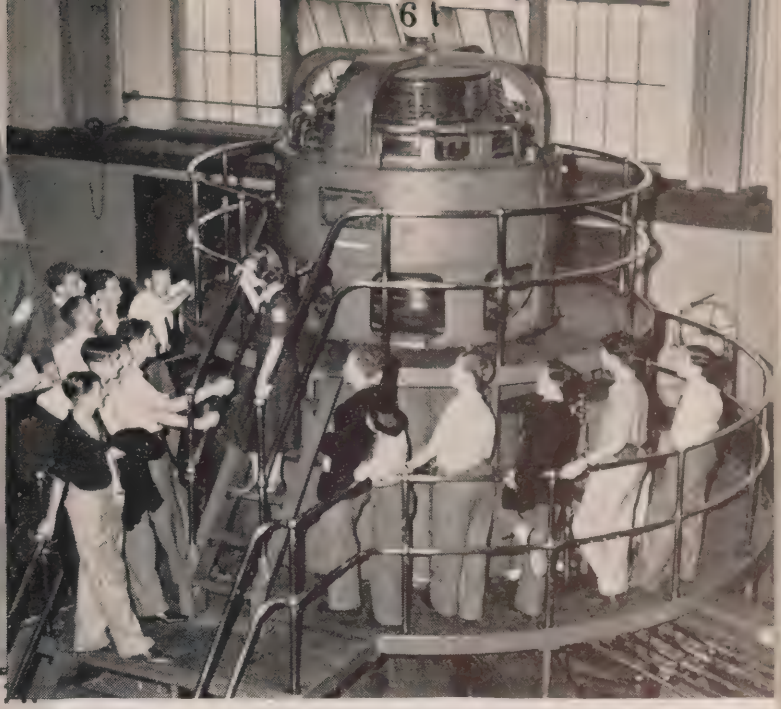
Trip a Schoolboy's Dream

The trip of these 50 boys to Canada—truly what might be called a schoolboy's dream—resulted from an idea conceived by Garfield Weston when he retired as Parliamentary member for the constituency of Macclesfield, England. His plans were interrupted by the war and the present group is the first to visit Canada as his guests. Twenty-five of the party were chosen from the constituency of Macclesfield while the remainder were selected from all parts of Great Britain. They range in age from 14 to 17.

The boys arrived in Canada, aboard the Empress of France, and landed at Montreal, August 2. After touring the Quebec metropolis they visited Ottawa and then Toronto. Upon leaving the Falls they visited London, Hamilton and St. Thomas and then returned to Toronto. After this crowded itinerary they were given ample opportunity to rest up for the voyage home at the Y.M.C.A. camp at Pine Crest, Muskoka. There they spent two weeks, a fitting ending to a wonderful adventure.









UPPER LEFT—An official civic welcome was extended to the youthful visitors by Mayor William Houck, M.P., of Niagara Falls at a dinner in the famous Rainbow Room of the General Brock Hotel. Seated at the speaker's left are D. J. Flannery, H.E.P.C. and Leslie Vipond, Secretary of the National Council, Y.M.C.A.

UPPER RIGHT—Grouped around one of the huge generating units, the boys learn more about its operation from Guide Audrey Bracken of the Queenston-Chippawa staff.

LEFT—Keen interest was shown by the visitors in the hundreds of dials and indicators of the Control Room—the nerve centre of the huge station.

BELOW—Lewis Blake Duff, newspaper publisher and historical authority on the Niagara Peninsula, was guest speaker at the dinner in the evening. Others in attendance at the dinner were J. P. Cowley, Director of the visiting party, left, and M. J. McHenry, Hydro's Director of Consumer Service, right.



HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



AUTUMN FRUITS have flavour, colour, contrast and a sort of cool deliciousness that is so distinguished they need little to make them any better. You may begin such a meal with chowder and end with brisk iced tea.

Helen Hunt Jackson wrote:

The golden-rod is yellow;
The corn is turning brown;
The trees in apple orchards
With fruit are bending down.

Products of the Autumn season help decorate the table: pickled peaches; pumpkin pie and cheese; luscious melons, applesauce and gingerbread; fragrant chili sauce; corn relish and plum conserve. You can get a whiff of some of these dishes as you pass each kitchen door.

* * *

You were asking about sandwiches? If you cut bread in ¼ inch slices, you'll have 7 or 8 sandwiches per loaf. One-quarter pound of butter will spread 15 or 16 slices. Buy ½ lb. peanut butter or ½ lb. tin salmon or 1 lb. cold sliced meat for 8 sandwiches.

* * *

For interesting salads try: cottage cheese with shredded spinach; strips of ham with sections of orange; slices of cucumber in lime jelly; fluted bananas in cherry jelly; melon balls rolled in poppy seed; pineapple wedges pierced with slivers of carrot.

* * *

Nutmeg—just a sprinkle—on cooked turnip greens is something you might like to try.

* * *

A quick crunchy topping for a meat or fish pie instead of pastry may be found on your cereal shelf. We like shredded wheat squares broken and patted onto the gravy mixture—then baked in a hot oven.

* * *

Don't know why so many people consistently use french fried potatoes, when they can be plain, baked or boiled, mashed or fried. Pep up with paprika, dash of celery salt, parsley or onion tops.

* * *

Pickles keep their natural green colour when a layer of grape leaves is scattered over the big jar or crock.

* * *

Grape jelly tends to crystallize—especially if the grapes are very ripe. To prevent this, add chopped tart apples to the mixture and cook together. To one quart of grapes add one medium apple cut in pieces, removing core only. The apple will improve the flavour too.

* * *

Remember to squeeze the skins off the grapes to be made into jam. Cook the skins separately by bringing them to a simmering point.

* * *

Buttermilk is refreshing and nutritious. Homemakers may discover that its unusual tangy flavour is a wonderful addition to favorite recipes. Gingerbread, for instance, is more tender and moist made with buttermilk.

* * *

Making kabobs is rather interesting. Everyone believes there is a more delicate flavour in these foods yet they are just the same as other broiled meats. Beef tenderloin cut in 1-inch cubes, stuck with a toothpick is broiled quickly, close to the hot element. Serve with seasoned slices of green tomato and fresh boiled potatoes. This is our favourite September supper.

* * *

Melons will soon be out of sight. Enjoy chilled wedges of melon that are trimmed neatly and sprinkled with salt . . . or sprinkled with a little minced green mint. Cubes of melon with fingers of cake may be arranged in sherbets. Soak with orange juice or a carbonated orange drink, the last minute before serving.

* * *

You really wake up when you come to breakfast and see colourful egg cups. Then, too, because they're plastic, they make very little noise when placed on the plate.

* * *

Do you ever make left-over applesauce into a fresh pie? It can be very tasty. Combine 3 cups thick sieved applesauce, 1½ tbsps. flour, 1 tsp. nutmeg, 3 egg yolks beaten, 1 tbsp. butter. Pour into lined pie plate. Criss-cross strips of pastry over the top. Flute the edge and bake for 40 minutes in electric oven of 425 degrees.

* * *

Eggs and milk make the best custard. When eggs are expensive, we substitute 2 tablespoons flour for 1 egg. However at least one egg must be used per cup of milk . . . flour may be substituted for other eggs.

* * *

Savoury string beans: cook beans twenty minutes or until tender and drain. Brown onion rings in greased frying pan. Add a dash of cream, a pinch of mustard to onions and pour over string beans.

* * *

If someone would sing cream-o'-tartar several times on the radio it should remind us to add ½ tsp. of it to white vegetables to keep them white when cooked. Cream of tartar softens the water and thus keeps cauliflower, white onions and white cabbage white. Of course, minimum cooking period is necessary to maintain shape and colour.

* * *

There are two ways to prevent pickle sauce from burning as it begins to thicken. One method is to slip an old tin pan under the preserving kettle during the last ½ hour of cooking. Another way to prevent scorching is to place the kettle of mustard sauce in a 375 degree oven during latter part of cooking.

* * *

Cottage cheese is more difficult to make with homogenized milk than whole milk. In fact it is better to simmer 1 quart whole milk and ½ cup buttermilk for a creamy cheese.

* * *

Grandmother's pickles are always crunchy. The secret, she tells us, is the measurement of salt and water for brining. One cup salt to 2 quarts (10 cups) water is recommended.

CHIPPAWA

(Continued from page 14)

water to turn the great turbines and generators of Hydro's largest power plant. Oddly enough the direction of flow of the Welland River was changed when the power canal was opened and started drawing water from the river. Previously it had flowed into the mighty Niagara River. Now it empties into the canal, and the northeast section of the Welland River channel, beyond the canal, draws water from the Niagara to feed the canal.

The visitor to Chippawa who is interested in the early history of the Niagara area will find that the village is richly linked with the pioneer days of the frontier. The home where Laura Secord, famous heroine of the war of 1812-14, lived in her later years and died, stands almost in its original state on the east bank of the Welland River a block south of the traffic bridge that connects the two parts of the village. This sturdily built brick dwelling occupied today by a prominent Chippawa resident, Grant McKenzie, once was operated as a private school by Laura Secord in addition to being her living quarters. Here the Canadian heroine instructed many of the young people of the village.

From Indian Word

The village name is an Indian word, and has been variously spelled "Chippewa" and "Chippeway." The modern spelling is "Chippawa." The Indian signification of the word is "people without moccasins."

Early history reveals that the French once built a stockade before the conquest at this place which later was to bear the name Chippawa. During the war of the American Revolution, a blockhouse was constructed and was subsequently known as Fort Welland. The situation of the place at the head of the portage on the left bank of the river caused it to become of some importance at an early period. A small settlement soon sprang up around the stockade which was usually occupied by a dozen regular soldiers.

In the spring of 1814, a long line of breastworks and entrenchments was constructed by the 1st Battalion of the 8th Regiment on the left bank of the Welland River at Chippawa. But they were abandoned by General Riall two days after being repulsed on his attack on the American position near Street's Creek on the 5th of July, and the bridge over the stream was destroyed.

As long as the portage around the Falls was used in transporting goods between Lakes Ontario and Erie, Chippawa grew and prospered and bid fair to become one of the centres of trade in the Niagara district. But the completion of the Welland Canal and the construction of railways sealed its fate.

In the early days of Chippawa's prosperity, James Cummings and Oliver T. Macklem were among the most enterprising of the citizens. They operated a foundry which once turned out forty stoves daily, while an adjoining machine shop built engines for some of the steamers that navigated the lakes. A tannery did so extensive a business, that it was described in "Smith's Canada" in 1850, as having manufactured during the previous year "twenty-two thousand sides of leather, four thousand calf skins, and two thousand sides of upper leather." Thomas C. Street, Welland County's "millionaire" and for many years its represenative in parliament, resided in a beautiful dwelling on the riverside adjoining the village.

According to an inscription on a headstone in one of the lovely, quaint old churchyards in the village, Thomas Cummings, a United Empire Loyalist, settled in Chippawa in 1783. His son, James Cummings, one of the prominent early leaders of the community, was born in 1789. The square in the centre of the village was named for this family which played such an important part in the development of Chippawa.

During the long period that Chippawa has existed as a community, many of her sons and daughters have moved and settled in other parts of the country, several of them having made important contributions to the progress and development of Canada. Those who remain and make their livelihood in the village are convinced that Chippawa is one of the most pleasant places in the Dominion in which to live.

New Headquarters For Mimico P.U.C.



OFFICIALLY OPENED August 3, the new administration building of the Mimico Public Utilities Commission is shown above. Situated at 261 Church Street, the attractive brick and stone structure will be used as headquarters for Mimico's two public utilities, as well as housing the municipal council. The mayor's office will also be located in the building. After the symbolic turning of the key in the front door by M. J. McHenry, Director of Hydro's Consumer Service Division, short speeches of welcome were given by Mimico Chairman Frank Pownall, Mayor A. D. Norris, and Commissioner James Edmonds. During the inspection of the building, the visitors admired the interior decorating scheme, which combined delicate apple-green walls, blond wood, fluorescent lighting, and terrazzo and linoleum floors into a pleasing effect of cool spaciousness. Flags and baskets of fragrant phlox and gladioli added a festive note to the occasion.

EXPERIMENTAL PROGRAM COMPLETED

HYDRO'S preliminary and experimental frequency conversion program, which has been proceeding in East York Township since May 18, was completed on September 21, according to an announcement made by Commission Chairman Robert H. Saunders. By that date about 1,500 consumers of all categories had been "changed over" to 60-cycle power through the facilities afforded by the Scarboro frequency changer station. About ten times that number, however, will continue to be supplied with 25-cycle electricity until the regular change-over planned for East York early in 1950 is carried out.

"These trial conversions," Mr. Saunders explained, "have provided us with much valuable and necessary information and experience for our major $200,000,000 conversion activity which is expected to get underway in Scarboro municipality late this fall. In addition to these experimental conversions in East York, the change-over program involves a tremendous amount of preliminary work, which, in many cases, must be started a long time ahead of actual conversion. For instance, the Commission is at present engaged in taking equipment inventories not only in Scarboro but also in the Sarnia, London, Kipling-Fairbanks, Windsor and Hamilton areas."

Hydro's large warehouse buildings at Kipling Avenue near Islington are reported to be rapidly filling with the materials required for the earlier conversion activities. Outside of operating equipment such as trucks, cars, etc., the value of the change-over stocks already in storage is said to exceed four and one-half million dollars.

Commencement dates for conversion from 25-cycle to 60-cycle power in the principal municipalities of the province are as follows:

Municipality	Year
Acton	1953
Agincourt	1949
Alvinston	1950
Amherstburg	1952
Ancaster Twp.	1951
Aurora	1950
Aylmer	1954
Ayr	1955
Baden	1952
Beamsville	1956
Belle River	1952
Blenheim	1953
Bolton	1950
Brampton	1953
Brantford	1955
Brantford Twp.	1955
Burford	1955
Burlington	1951
Caledonia	1957
Cayuga	1957
Chatham	1953
Chippawa	1958
Clinton	1951
Delhi	1956
Dresden	1953
Dundas	1953
Dunnville	1957
East York Twp.	1950
Elmira	1952
Elora	1953
Erieau	1953
Essex	1952
Etobicoke Twp.	1951
Exeter	1950
Fergus	1953
Fonthill	1957
Forest	1950
Forest Hill	1951
Galt	1952
Georgetown	1953
Goderich	1951
Grimsby	1956
Guelph	1953
Hagersville	1957
Hamilton	1954
Harriston	1951
Harrow	1952
Hespeler	1952
Humberstone	1957
Ingersoll	1955
Jarvis	1957
Kingsville	1952
Kitchener	1952
La Salle	1952
Leamington	1952
Listowel	1951
London	1950
London Twp.	1951
Long Branch	1951
Markham	195
Merriton	195
Milverton	195
Milton	195
Mimico	195
Mitchell	195
New Hamburg	195
Newmarket	195
New Toronto	195
Niagara Falls	195
Niagara-on-the-Lake	195
North York Twp.	195
Norwich	195
Oakville	195
Palmerston	195
Paris	195
Petrolia	195
Point Edward	195
Port Colborne	195
Port Credit	195
Port Dalhousie	195
Port Dover	195
Port Rowan	195
Preston	195
Richmond Hill	195
Ridgetown	195
Riverside	195
St. Catharines	195
St. Marys	195
St. Thomas	195
Sarnia	195
Scarboro	194
Seaforth	195
Simcoe	195
Smithville	195
Stamford Twp.	195
Stoney Creek	195
Stouffville	195
Stratford	195
Strathroy	195
Streetsville	195
Swansea	195
Tavistock	195
Tecumseh	195
Thorold	195
Tilbury	195
Tillsonburg	195
Toronto	195
Toronto Twp.	195
Trafalgar Twp.	195
Wallaceburg	195
Waterford	195
Waterloo	195
Watford	195
Welland	195
West Lorne	195
Weston	195
Windsor	195
Woodbridge	195
Woodstock	195
York Twp.	195

PLAN CONSTRUCTION ATOMIC POWER PLANT

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Construction bids have been asked on what is expected to be the first plant to produce "significant" amounts of atomic power, it was reported recently in the Federal Power Commission's News Digest. Bids were asked for the first units, which will form part of the Knolls Atomic Power Laboratory. The plant will be erected about 18 miles north of Washington D.C., and will occupy 4,000 acres.

44,500,000,000
(Continued from page 9)

peak periods of the year, the construction of two new steam-electric stations was decided upon. One of these is located at Windsor and construction has already begun. It will have a capacity of 160,000 horsepower, and when it comes into service in the fall of 1951, it will be the largest steam-electric plant in Canada. Soon afterwards, however, it will be overshadowed in size by the new steam turbine station here in Toronto, which will have an initial capacity of approximately 200,000 kilowatts (267,000 horsepower). During the coming fall and winter, I might add, the Commission's hydro-electric resources in the Southern Ontario power pool will be augmented by at least 80,000 horsepower from emergency steam-electric installations.

This is an electrical era. Not only is the demand for power increasing but the uses of electricity are broadening and bringing a new perspective to the work and life of our people in every part of this wonderful Dominion of ours. Electric generating utilities and electrical manufacturers in every province of this Dominion are forging ahead to ensure Canada's future prosperity.

B. L. Clutterbuck Passes

For many years a well-known figure in municipal affairs, Burton L. Clutterbuck, Reeve of Scarboro Township, and Scarboro Public Utilities Commissioner from 1939-45, died suddenly on September 13. He was 59.

At the time of his death Mr. Clutterbuck was a member of the Scarboro Council, having held that office for two years. He had been active in many facets of community life, including the organizing of many activities during the war years, helping found Scarboro's branch of the Red Cross, acting as one of the first members of the fire brigade, and taking a keen interest in children's sports events.

One of the most gracious moves in his long political career came when he withdrew from his campaign for the Reeveship in order to enable a colleague to succeed him by acclamation.

Blessed with a keen sense of humour and a faculty for impromptu rhyming, he turned both of these assets to good use in his public life.

Born in England, Mr. Clutterbuck emigrated to the Toronto area in 1912. His home on Springdale Avenue is the product of his own hand, as is his carefully tended garden. He was a pioneer and an active member of the Scarboro Horticultural Society.

Surviving are his widow, Isabel, and two daughters, Mrs. Stanley C. Cox and Mrs. Sidney Woodside, both of Toronto.

OFFICIALS OF the Buffalo Niagara Electric Corporation, Canadian Niagara Power Company and Niagara Hudson Power Company were guests of the Commission during a recent visit to Hydro's Des Joachims development and other Ottawa River projects. Pictured in the vicinity of the McConnell Lake control dam, the visiting party includes, left to right, Dr. N. R. Gibson, Chairman of the Board, Canadian Niagara and Vice-President of Buffalo Niagara; Angus Richardson, Construction Superintendent at Des Joachims; R. L. Hearn, General Manager and Chief Engineer, H.E.P.C.; G. F. Watters, Ass't Vice-President, Buffalo Niagara; L. S. Bernstein, Mechanical Engineer, Canadian Niagara; C. A. Clancy, Vice-President and General Manager, Niagara Hudson; H. Howell, Assistant to Vice-President, Niagara Hudson; A. W. Manby, Assistant General Manager — Administration, H.E.P.C. and William Hogg, Resident Engineer, Des Joachims.



"A growing boy



IT WOULD appear that Chairman T. Fells of the Wingham Public Utilities Commission is really "putting the finger" on this group. His audience consists of D. Kennedy, Wingham; W. A. Kramer, Mildmay; R. Hotten, Mildmay; and Manager D. W. Jeffs of the Wingham P.U.C.

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EVIDENTLY THAT last story was worth getting down on paper for Jim Smeaton is busily recording it in his "little black book." The others, left to right, are Bill Wilson, E. Bigelow, C. Johnson, A. Hill, R. Flewelling, Don Grant and C. Ogilvie.



by
John A. Murphy
Hydro News

FROM the standpoint of power consumption the Georgian Bay district of Ontario is showing all the heathly symtoms of "a growing boy."

This was the theme of a report made by D. G. Ferguson, Manager of Hydro's Georgian Bay Region to the delegates to the annual convention of District Two of the Ontario Municipal Electric Association. The convention was held at Penetang on September 7 and 8, and was attended by more than 200 municipal representatives.

Mr. Ferguson stated that in the past year the power load of the Georgian Bay System had increased eleven and one half percent and was continuing its upward trend. "To handle the expansion," he said, "many municipalities are revising their distribution systems and are working in close consultation with our Consumer Service Engineer to work out the most feasible plan of action."

Forestry Training

The Regional Manager also referred to the progress being made in the training of rural line crews with the goal of reducing transmission line interruptions to a minimum. In addition, the gathering was told, the crews were receiving forestry training to facilitiate the trimming of branches and the removal of fallen trees from power line rights-of-way.

Following Mr. Ferguson, C. E. Crease, Consumer Service Engineer for the Georgian Bay Region, spoke briefly and emphasized the importance of adding new power contract consumers to maintain the general prosperity of the region.

The convention got under way on the evening of Wednesday, September 7 with an Executive Dinner and Meeting aboard the S.S. Midland City. During the evening the delegates were taken for a cruise on Georgian Bay and, despite the autumn-tempered breezes, all pronounced the voyage a complete success.

Tribute to Herman Denef

For the first time a familiar figure was missing from the ranks of the delegates

(Continued on page 29)

Power Load In Georgian Bay Region Increased 11½ Percent In Past Year, D. G. Ferguson Tells District No. 2 O.M.E.A. Delegates





UPPER LEFT—One of the high spots of the convention was the trip aboard the S.S. Midland City from Penetang to Honey Harbour where the luncheon and afternoon session was held at the Delawana Inn. Here we see the nautical delegates about to disembark at the Honey Harbour wharf.

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UPPER RIGHT—Between sessions some of the boys took to the air in a quite literal sense. A small amphibian was available for short sight-seeing flights and such was the response from the eager delegates that they had to line up on the dock and wait their turn.



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OUR PHOTOGRAPHER found C. D. Moffat, York Township; C. H. Spencer, York Township; S. Mahone, Toronto; and H. R. McClymont, York Township; enjoying the refreshing breeze on the upper deck.

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UP IN the wheelhouse S. Dube of Penetang took a turn at the wheel under the watchful eye of First Officer Weatherell of the Midland City.



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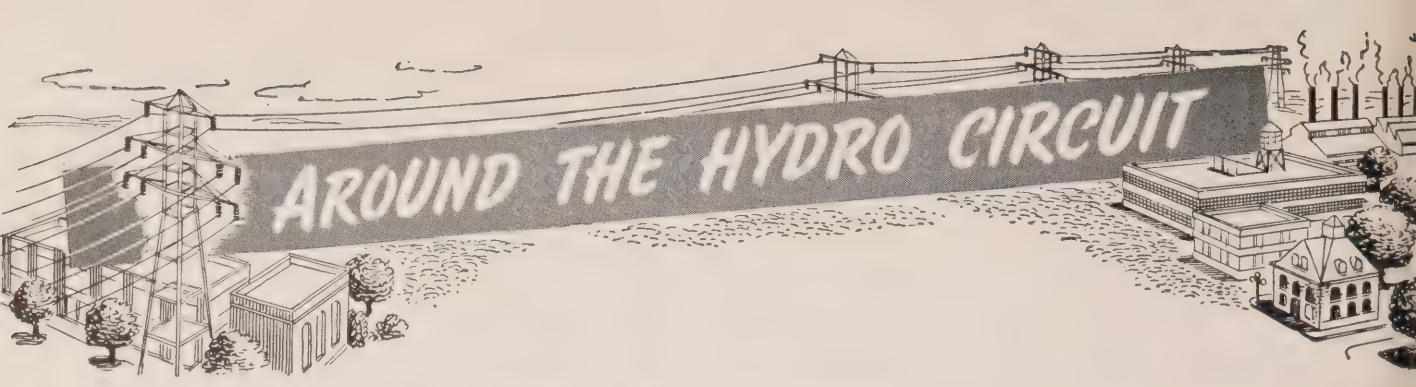
LOWER LEFT—In the midst of a post-dinner chat are R. J. Beaulieu, Penetang; W. Ross Strike, Second Vice-Chairman, H.E.P.C.; Walter Dixon, Arthur; A. W. Manby, Assistant General Manager—Administration, H.E.P.C.; M. J. McHenry, Director of Consumer Service, H.E.P.C.; and C. J. Halliday, Chesley.

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LOWER RIGHT—A. C. Northover of Midland and D. G. Ferguson, Georgian Bay Regional Manager, were enjoying a conversational duet when our roving camera recorded this shot.







Dual Frequency Units Are Effecting Important Time and Money Savings

IMPORTANT savings are being effected in the Commission's Frequency Conversion program by the installation of dual-frequency equipment to take care of load growth.

In commenting on this aspect of frequency conversion, Chairman Robert H. Saunders explained that by expending a little more money at the moment, the Commission is saving itself and its consumers considerably larger sums at a later stage in the program. The equipment installed, including transformers, motors and fluorescent lighting ballasts, will be less expensive in the long run, in that it is very much easier to convert, thus saving the Commission time and money.

The Commission itself is installing dual-frequency transformers in its own substations. The initial cost of such equipment is slightly higher than the cost of 25-cycle transformers, but this excess is more than balanced by the subsequent reduction in the cost of change-over. The dual-frequency transformers will require only reconnecting. In addition, when operating at 60-cycles, their capacity will be substantially increased, thus providing for future load growth without further installation.

Certain types of small special transformers, such as welding transformers, are being installed by manufacturers in their own plants on a 25-60-cycle basis. In such cases, the Commission pays the difference between the cost of these transformers and that of 25-cycle transformers.

Installation of dual-frequency motors in industrial plants is being carried on solely by the plants concerned. However, an arrangement has been made between the Commission and the motor manufacturers whereby the industry is billed for the same amount as it would pay for a 25-cycle motor. The difference, which amounts to less than 10 percent of the cost, is paid directly to the manufacturer by the Commission.

Commission and consumer alike benefit from this procedure. Hydro saves approximately 60 percent of the installation cost of 60-cycle equipment by not having to replace or rebuild the motors at the time of conversion, and in addition there is a substantial reduction in the time and engineering effort required for the installation. In actual dollars this should save the Commission upwards of $1,500,000. The consumer benefits by the reduced tariff — his share of the conversion cost on dual-frequency motors is only 50 percent of the tariff which would be imposed on conversion of 25-cycle equipment.

APPOINT NORMA CRANE NIAGARA SEC'Y-TREAS.



ALMOST eight years after joining the staff of the Niagara Falls Hydro-Electric Commission as a clerk, Norma Elizabeth Crane was appointed Secretary-Treasurer of the Commission on June 7 of this year, being the first lady to hold that position. She succeeds the late James W. Bayliss, who served in that capacity for 36 years.

A graduate of Loretto Academy, a school for young ladies, at Niagara Falls, Miss Crane was on the staff of the Niagara Falls Evening Review prior to joining the Niagara Falls Hydro-Electric Commission. She is active in the I.O.D.E. in Niagara Falls, being a member of Niagara Rangers Chapter, and is also identified with the Niagara Falls Badminton Club.

Start Work At Peterborough On New Station

Hydro Undertakes Construction Of New Transformer Station To Serve Peterborough Consumers — Will Also Deliver Power To Lindsay, Port Hope and Oshawa.

WORK is now proceeding at the site of the new $5,000,000 Peterborough Transformer Station which is being built by the Commission to serve Peterborough consumers while delivering power to Lindsay, Port Hope and Oshawa. Situated three miles west of Peterborough, on the Lindsay-Peterborough C.N.R. line, the station is expected to be in initial operation by September 1, 1950, while the ultimate completion date is January 1, 1951.

A 230,000-volt line from the Chenaux development, now under construction on the Ottawa River, is scheduled to pass through the new station. Already built and operating at 115,000 volts from Barrett Chute to Oshawa, this line will be reconnected in order to run from Chenaux to Peterborough, and will operate at a voltage of 230,000, for which it was originally constructed. At Peterborough, power from this line will be stepped down to 115,000 volts for transmission to Oshawa.

In addition, power will be stepped down to 44,000 volts for transmission to municipalities in the immediate area. The new station, according to plans, will be the terminal for five existing 44,000-volt transmission lines, two to serve Peterborough, two to serve Lindsay, and one to deliver power to Port Hope.

It is estimated that 50,000 cubic yards of earth will be moved in the grading operations now proceeding, and 350 tons of steel will be used at the 30-acre site. Construction of a railway siding, it is expected, will get under way shortly, and concrete footings for some of the buildings are expected to be poured this fall. Work on the station will continue through the winter, with a maximum of 200 men employed on the job at one time.

A GROWING BOY

(Continued from page 26)

and his absence gave the convention its only sorrowful note. The untimely death of Herman Denef of Hanover a few weeks ago was keenly felt by all who knew him. Many tributes were paid to his memory, none more fitting than that spoken by W. Ross Strike, K.C., Hydro's Second Vice-Chairman. "Herman Denef was a great public servant," said Mr. Strike, "he gave of himself entirely so that the world would be a better place to live in."

To fill the office of Secretary-Treasurer of District Two, held by Mr. Denef at the time of his death, the convention elected Robert Butter, the hard-working Manager of the Owen Sound Public Utilities Commission. The complete slate of executives included G. F. Hutcheson, Huntsville, Honorary President; Walter Dixon, Arthur, President; E. W. Theaker, Paisley, First Vice-President and Stan Sargeant, Orillia, Second Vice-President. The directors elected for the coming year were C. J. Halliday, Chesley; Herbert Robertson, Barrie; Lt.-Col. A. A. Kennedy, Owen Sound; Joseph Bull, Collingwood; R. S. King, Midland; G. W. Deegan, North Bay and W. J. Cross, Hanover.

At the conclusion of the general meeting at the Canadian Legion Hall in Penetang, the convention delegates repaired to the Midland City again for the hour-long sail across to Honey Harbour where luncheon was served.

During the general meeting that took place in the afternoon at the Inn, A. W. Manby, Assistant General Manager—Administration, told the gathering that if autumn rainfall was normal this year the Commission hoped that power cuts and reduced quotas would prove unnecessary. He pointed out, however that restrictions already made public would be in effect and stressed the need for voluntary conservation on the part of all classes of consumers.

Following Mr. Manby, M. J. McHenry, Hydro's Director of Consumer Service, briefly outlined to the gathering the role that the Regional Offices play in the day-to-day relation between the Commission and the municipalities and urged that the municipal commissions make as much use as possible of the facilities of their regional office.

Unfortunately, Hydro Chairman Robert H. Saunders was unable to address the delegates at dinner as had been planned but the Commission had an able representative in the person of Mr. Strike. After unleashing one of the "punniest" anecdotes of the current season, the Second Vice-Chairman reiterated the hope that there would me no power cuts this year and thanked the municipalities for their splendid cooperation during the emergency a year ago.

He also spoke to the delegates on the advisability of providing pension plans for the employees of municipal commissions. "If you do not have a plan in operation yet," he said, "I would suggest that you take the necessary steps to inaugurate one." The rise in the cost of living was an important factor in the choosing of a suitable pension scheme, Mr. Strike added.

The lighter side of the evening's program was furnished by Frank Gauthier of Midland. In the picturesque dialect of French Canada, Mr. Gauthier related—with gestures—the adventures of several noteworthy figures of habitant history and legend. The response of his listeners was so enthusiastic that he was forced to run through almost his complete repertoire before being allowed to sit down.

Committee Thanked

Upon the completion of dinner, the delegates boarded the Midland City for the return trip to Penetanguishene. But before setting sail they accorded a unanimous vote of thanks to the Convention Committee. Chairman R. J. Beaulieu, Mayor W. D. Hunter, Commissioner R. W. Emery, and Superintendent E. G. Nelson of the Penetang Water and Light Commission, performed an outstanding chore in the organization and supervision of the convention. The meals were enjoyable, the boat trips pleasant and the entertainment very entertaining. What more could one ask?

DRIVE FIRST PILE FOR TORONTO STATION



AN IMPORTANT step in the construction of Hydro's Toronto Steam Generating Station was taken recently with the driving of the first pile at the site of the new project located in the Toronto turning basin area. The event was marked by a short ceremony with Hydro Chairman Robert H. Saunders at the controls of the huge piledriver, shown above, left, which sent a giant tube casing into the ground. Some of those attending the brief ceremony including Chairman Saunders, Richard L. Hearn, General Manager and Chief Engineer; J. R. Montague, Director of Engineering and S. L. Fear, Liaison Engineer, as well as members of the Toronto Harbour Commission are shown above, right, beside the heavy pile-driving equipment.



BUT FOR one very small detail — the only detail which displeased his wife — Albert would now be driving, or trying to drive a midget automobile. It was a narrow escape to say the least and every time he thinks about it he mops his brow and shudders.

We are not suggesting that there is anything wrong with these Lilliputian limousines. In fact we are contemplating giving them all a try-out before jumping to any conclusions. But in the case of Albert, whom we know well, it was entirely different. It need only be mentioned that Albert is a 310-pound man with an over-all length of 6 feet 2½ inches plus an additional 7 inches when he is wearing his winter socks, thick shoes and chapeau. In short, he is a gentleman with a commanding presence.

It should be made clear at this point that Albert, himself, never had any yearning to own a midget car but, apparently his wife, Myrtle, had been as keen as mustard about a slick little European job which promised some 40 miles to the gallon. It may be significant to relate that the last time she stepped on the scales out popped a card which read: "You weigh 98½ pounds. You are not easily influenced but you are going to see something which will make a deep impression on you."

That something was apparently a midget car!

It happened on Labour Day at the C.N.E. Albert (our 310-pound hero), head back, "chest" out, walking cane under his arm and cigarette between lips, s-t-r-o-d-e into one of the buildings at the Exhibition with his little 98½ pound helpmate bouncing along at his side. In order that our readers may have a better idea of Albert, the man, a few pertinent facts should be mentioned. Despite his great proportions, he has a sensitive nature, believes in the glorious tradition of Noblisse Oblige, the Magna Carta and in the Blackwood Convention while he is a true patron of all the arts and sips port wine in the manner of a connoisseur. His voice is soft with an Oxford undertone and his Alma Mater is Aberdeen University, Scotland.

To turn the spotlight on his spouse for a moment, she is the kind of person who seems to symbolize womanhood on the march—aggressive, tenacious and highly endowed with a birdlike alertness. If the entire bearing of this slight, trim, highly energized little soul did not suggest a purposeful, realistic approach to life, from a birth, marriage or death, to the purchase of two pork chops cut to a specified thickness, her pawky, pointed observations, voiced in a West of Scotland accent, would remove all doubt. Myrtle, in brief, is the kind of woman who, if she were told that a needle was actually in a certain haystack, would disappear into that haystack and, in the twinkling of an eye, emerge, holding the needle between her fingers.

We feel these biographical sidelights will enable our readers to better appreciate the incident which occurred at the C.N.E.

When Myrtle's eyes lighted on that car something seemed to happen. If there is such a thing as affinity between the animate and inanimate, then it happened between Myrtle and the midget car.

"Oh, Albert," she coaxed, "look at the bonnie, wee car."

Albert looked down from his great height with something akin to alarm and

by
The Editor

embarrassment. He, Albert, who should be appraising the stately Rolls-Royce or Cadillac, was being asked to look at this . . . this . . . words failed him. A snigger from the crowd gave him the courage to retort: "My dear, would you like them to wrap it up and I will carry it home for you?"

"Albert!" There was an unmistakable battle note in Myrtle's voice "Here's the man. We'll talk to him."

Sure enough the man was there, complete with flower in lapel and smile of face. He was quick to sense that he had an ally in "the little woman."

"A beautiful little job with big car features," he purred as he flipped open the right, rear door, with a gallant and inviting gesture. Myrtle was ready. Just one bounce and she was seated. The door clicked shut and the window flipped open.

"Albert, get behind the wheel."

These words brought Albert face to face with one of the big decisions of his life.

"There you are, sir." Again the chauffeur gesture as the right, front door was held open.

"If I were really a mouse instead of a man," mused Albert, "this thing would be easy."

Then he remembered those medals at home—Canal du Nord, Vimy Ridge—and he set teeth and stepped forward.

"No . . . No, sir, don't step in; go backwards, sit down, draw your feet up and you'll be all set."

Albert finally wiggled and edged into a sitting position with his feet outside on the ground and the car listing south by east.

"Independent front wheel suspension," the anxious salesman explained to the little woman sitting sedately in the back.

During the next thirty seconds the spectators were treated to an amazing demonstration of acrobatic ingenuity as Albert finally succeeded in getting behind the wheel. The fact that there were two front seats made it possible for Albert to maintain a certain degree of equilibrium. With knees crouched up and his hat scraping the roof, Albert looked balefully ahead to a future that was fraught with uncertainty.

"Albert, get out, I don't want this car."

If Albert had displayed an unusual skill in getting into the car, his exit was an achievement of the first magnitude for speed and gymnastic dexterity.

A safe distance from the midget car, Albert bent down: "Why didn't you like the car, dear?"

"Didn't you see?" shot back the little woman.

"No, dear."

"That awful looking ash tray," she snorted.

Albert closed his eyes for a moment, raised them and there was a smile on his lips.

There was a dreamy look on his face as he s-t-r-o-d-e in the direction of the Rolls-Royce. And Myrtle kept bouncing along at his side.

NEWS IN BRIEF

INCREASED PRODUCTION

Production of domestic washing machines and electric refrigerators continues to climb, according to figures released by the Dominion Bureau of Statistics recently. Output of domestic type washing machines in May totalled 29,782 units compared with 24,716 in May, 1948. In addition, 13,836 household electric refrigerators were manufactured in May, 1949, an increase of 25 percent over the same month last year.

☆

CHERRY TREES PERHAPS!

Trees which George Washington planted at Mount Vernon have been wired for protection against lightning, an engineer of Westinghouse Electric Corporation stated recently. The valuable Mount Vernon trees are protected by wires running up the trunks. These wires are designed to carry the lightning harmlessly to the ground should the trees be struck.

☆

FASTER THAN THE EYE!

X-ray motion pictures made with an exposure speed 2,000 times faster than the blink of an eye were demonstrated recently by an electrical research engineer. Donald C. Dickson, speaker at the opening of the fifty-second annual meeting of the American Society for Testing Materials, showed a 25-second film of a violent chemical reaction actually lasting a second and a half.

☆

CANADA AUGMENTING POWER RESOURCES

Construction of new hydro-electric generating plants with a total operating capacity of almost 3,000,000 horsepower is now under way in Canada, according to a special survey published in Electrical News and Engineering. Total installed primary power capacity at the end of this year will be 12,104,138 horsepower with a capacity of 14,759,685 horsepower available by the end of 1953.

☆

BRITAIN EXPECTS POWER SHORTAGE

Owing to increased demands a power shortage is expected in Britain next winter. Although capacity has been increased by 900,000 kilowatts, it is still insufficient, and an advisory committee of experts has advised the government that restrictions will have to be placed on the use of electricity as the daylight hours become shorter.

★

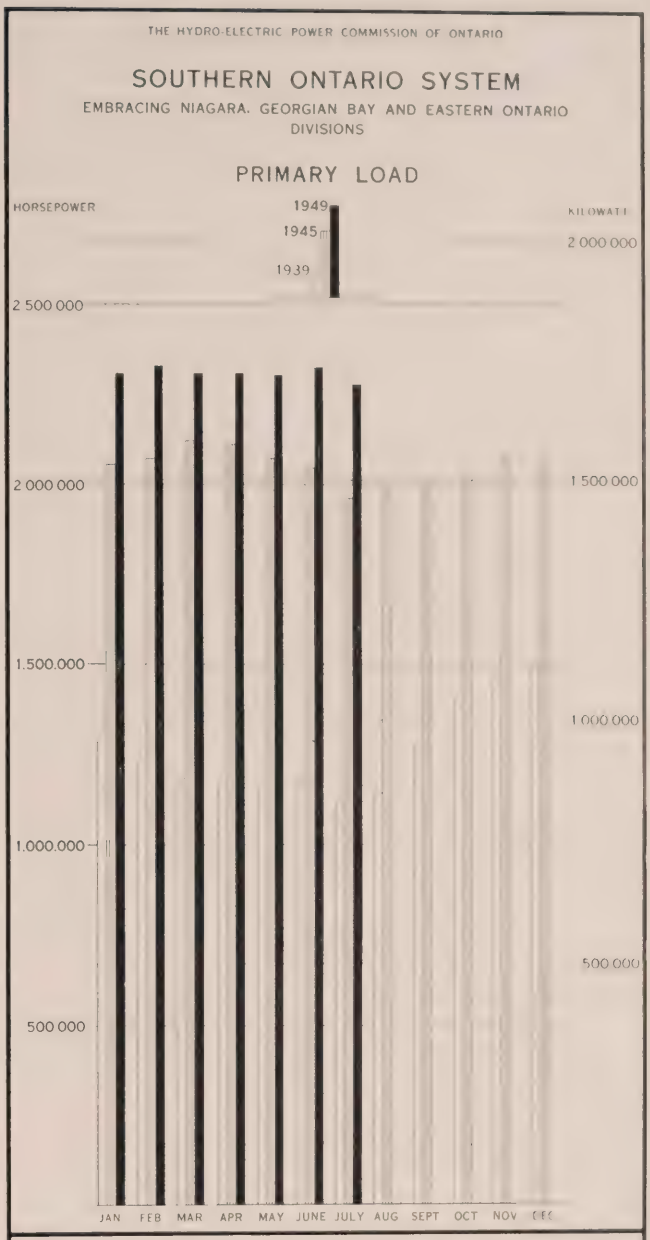
TELEVISION FOR 25 CENTS

Coin-operated television machines will soon be introduced in New York, it was announced recently. The buyer will receive one hour of television for 25 cents. Money deposited in the meter will be collected periodically and applied against the purchase price.

★

UTILITY PRODUCTION UP

Production of energy by U.S. electric utilities during May totaled 23,348,224,000 kilowatt-hours, the highest May production total on record, according to the Federal Power Commission. The May total was 3.3 percent higher than last year's.



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	GREATEST 20-MINUTE PEAK KW JULY 1948		
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System	1,758,410	1,752,792	+ 0.3
Thunder Bay System. .	150,859	114,594	+ 31.6
Northern Ontario Properties	209,837	192,532	+ 9.0
TOTAL GENERATION — INCLUDING POWER PURCHASES			
Southern Ontario System	1,703,600	1,634,097	+ 4.3
Thunder Bay System.	165,259	118,894	+ 39.0
Northern Ontario Properties	220,137	228,917	- 3.8

MUNICIPAL LOADS, JULY, 1949

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION

(25-Cycle)

	Peak in K.W.	Domestic Consumers
Acton	1,782	686
Agincourt	393	200
Ailsa Craig	184	167
Alvinston	124	233
Amherstburg	1,210	857
Ancaster Twp.	444	376
Arkona	105	132
Aurora	1,521	899
Aylmer	1,200	861
Ayr	375	248
Baden	597	172
Beachville	686	188
Beamsville	570	480
Belle River	278	398
Blenheim	517	648
Blyth	203	185
Bolton	255	220
Bothwell	140	209
Brampton	3,225	1,902
Brantford	20,530	9,280
Brantford Twp.	2,305	2,314
Bridgeport	247	227
Brigden	119	137
Brussels	295	275
Burford	385	265
Burgessville	91	63
Burlington	1,807	1,464
Burlington Beach	525	774
Caledonia	379	483
Campbellville	69	64
Cayuga	202	214
Chatham	7,435	5,193
Chippawa	333	434
Clifford	128	145
Clinton	961	698
Comber	113	153
Cottam	93	155
Courtright	61	122
Dashwood	179	118
Delaware	95	82
Delhi	552	730
Dorchester	99	162
Drayton	146	181
Dresden	597	560
Drumbo	130	110
Dublin	75	71
Dundas	3,022	1,599
Dunnville	1,277	1,178
Dutton	224	247
East York Twp.	9,995	13,969
Elmira	1,522	650
Elora	546	390
Embro	181	147
Erieau	270	247
Erie Beach	52	98
Essex	691	645
Etobicoke	11,563	9,540
Exeter	997	709
Fergus	1,700	830
Fonthill	273	346
Forest	653	568
Forest Hill	4,005	4,163
Galt	10,213	4,936
Georgetown	2,135	1,085
Glencoe	205	265
Goderich	2,103	1,531
Granton	85	90
Grimsby	946	741
Guelph	11,588	6,413
Hagersville	1,127	463
Hamilton	133,841	46,717
Harriston	669	408
Harrow	621	407
Hensall	291	227
Hespeler	3,182	936
Highgate	94	114
Humberstone	595	869
Ingersoll	3,273	1,974
Jarvis	171	173
Kingsville	578	720
Kitchener	26,222	10,006
Lambeth	131	174
LaSalle	380	374
Leamington	1,883	1,991
Listowel	1,581	955
London	33,456	22,656
London Twp.	494	614
Long Branch	1,891	1,986
Lucan	256	237
Lynden	123	114
Markham	456	393
Merlin	131	147
Merritton	9,220	1,108
Milton	1,641	651
Milverton	442	295
Mimico	2,591	2,607
Mitchell	990	585
Moorefield	85	72
Mount Brydges	107	192
Newbury	78	90
New Hamburg	833	432
Newmarket	2,072	1,295
New Toronto	9,034	2,246
Niagara Falls	8,826	5,471
Niagara-on-the Lake	1,027	725
North York Twp.	13,709	11,960
Norwich	476	427
Oil Springs	144	124
Otterville	164	179
Palmerston	575	457
Paris	1,791	1,301
Parkhill	369	375
Petrolia	687	867
Plattsville	250	129
Point Edward	1,878	417
Port Colborne	1,505	1,789
Port Credit	1,014	753
Port Dalhousie	1,104	779
Port Dover	729	897
Port Rowan	121	226
Port Stanley	1,168	898
Preston	4,054	1,870
Princeton	185	103
Queenston	170	89
Richmond Hill	566	527
Ridgetown	476	675
Riverside	1,151	1,941
Rockwood	174	192
Rodney	169	296
St. Catharines	22,163	9,801
St. Clair Beach	116	132
St. George	210	186
St. Jacobs	373	153
St. Marys	1,944	1,188
St. Thomas	6,767	5,019
Sarnia	10,149	5,963
Scarborough Twp.	7,363	8,554
Seaforth	1,077	574
Simcoe	2,743	1,879
Smithville	421	200
Springfield	86	128
Stamford Twp.	3,325	3,233
Stoney Creek	443	400
Stouffville	556	478
Stratford	7,508	4,885
Strathroy	1,526	1,041
Streetsville	575	247
Sutton	782	620
Swansea	2,160	2,224
Tavistock	685	325
Tecumseh	536	848
Thamesford	294	167
Thamesville	240	284
Thedford	172	192
Thorndale	139	89
Thorold	2,754	1,413
Tilbury	1,001	690
Tillsonburg	1,688	1,438
Toronto	284,799	156,481
Toronto Twp.	5,387	4,331
Wallaceburg	4,822	1,850
Wardsville	76	84
Waterdown	344	317
Waterford	410	472
Waterloo	6,370	2,644
Watford	457	333

MUNICIPAL LOADS, JULY, 1949

	Peak in K.W.	Domestic Consumers
Welland	8,683	3,463
Wellesley	191	154
West Lorne	506	275
Weston	4,372	1,940
Wheatley	306	273
Windsor	46,621	27,995
Woodbridge	983	349
Woodstock	7,389	3,847
Wyoming	88	192
York Twp.	18,033	24,626
Zurich	171	187
(66⅔-Cycle)		
Bronte	186	400
Oakville	2,453	1,406
Trafalgar Twp.	774	753

GEORGIAN BAY DIVISION

(60-Cycle)

Alliston	664	502
Arthur	259	303
Bala	510	443
Barrie	4,580	2,897
Beaverton	443	375
Beeton	137	165
Bradford	585	350
Brechin	55	70
Cannington	349	288
Chatsworth	155	126
Chesley	843	492
Coldwater	110	170
Collingwood	3,024	1,928
Cookstown	140	139
Creemore	209	204
Dundalk	244	236
Durham	605	526
Elmvale	281	218
Elmwood	119	94
Flesherton	155	144
Grand Valley	221	209
Gravenhurst	1,369	885
Hanover	1,947	973
Holstein	33	69
Huntsville	1,578	798
Kincardine	1,132	842
Kirkfield	36	41
Lucknow	426	360
MacTier	150	143
Markdale	291	242
Meaford	1,124	851
Midland	4,057	1,926
Mildmay	230	220
Mount Forest	768	545
Neustadt	115	143
Orangeville	1,004	838
Owen Sound	6,941	4,374
Paisley	226	238
Parry Sound	411	1,330
Penetanguishene	1,318	952
Port Carling	460	278
Port Elgin	886	617
Port McNicoll	145	265
Port Perry	441	452
Priceville	19	50
Ripley	125	144
Rosseau	88	79
Shelburne	427	356
Southampton	868	673
Stayner	451	342
Sunderland	222	174
Tara	177	178
Teeswater	285	247
Thornbury	174	297
Thornton	50	72
Tottenham	134	177
Uxbridge	537	512
Victoria Harbour	179	318
Walkerton	1,235	850
Waubaushene	259	274
Wiarton	584	518
Windermere	141	79
Wingham	1,054	661
Woodville	72	130

EASTERN ONTARIO DIVISION

(60-Cycle)

Alexandria	460	526
Almonte	652	710
Apple Hill	51	74
Arnprior	1,745	1,036
Athens	156	219
Bath	73	90
Bloomfield	210	197
Belleville	7,944	4,546
Bobcaygeon	321	435
Bowmanville	3,036	1,314
Braeside	212	101
Brighton	654	533
Brockville	6,963	3,469
Cardinal	436	419
Carleton Place	2,082	1,209
Chesterville	562	307
Cobden	229	203
Cobourg	3,057	1,617
Colborne	342	302
Deseronto	298	441
Finch	161	133
Frankford	293	262
Hastings	196	301
Havelock	255	329
Iroquois	380	
Kemptville	459	
Kingston	16,734	
Lakefield	580	
Lanark	153	
Lancaster	85	
Lindsay	3,730	
Madoc	397	
Marmora	189	287
Martintown	70	72
Maxville	176	200
Millbrook	155	220
Morrisburg	580	497
Napanee	1,658	1,026
Newcastle	319	256
Norwood	240	256
Omemee	231	204
Orono	124	207
Oshawa	18,791	7,650
Ottawa	26,649	16,849
Perth	1,757	1,282
Peterborough	16,716	8,744
Picton	1,716	1,263
Port Hope	3,444	1,733
Prescott	1,380	865
Renfrew	1,084	1,581
Richmond	114	119
Russell	127	123
Smiths Falls	3,644	2,318
Stirling	416	336
Trenton	5,411	2,328
Tweed	499	370
Warkworth	108	162
Wellington	409	379
Westport	146	173
Whitby	1,624	1,232
Williamsburg	115	96
Winchester	644	334

THUNDER BAY SYSTEM

(60-Cycle)

Terrace Bay	551	212
Fort William	19,104	8,715
Nipigon Twp.	460	343
Port Arthur	19,359	7,677
Red Rock	293	162

NORTHERN ONTARIO PROPERTIES

Nipissing District (60-Cycle)

North Bay	5,143	3,980

Patricia District (60-Cycle)

Sioux Lookout	539	650

Sudbury District (60-Cycle)

Capreol	557	482
Sudbury	9,900	9,347

Nice to have . . . and to hold



Bonds, like babies, are nice to have—and to hold. Incidentally, this baby's expression is probably symbolic of the feeling of many Hydro folk upon making the last payment for a Canadian Savings Bond. These employees, no doubt, will be carrying on the good work when the new issue is offered next month.

HYDRO News



BARRETT CHUTE

NOV

VOL. 36 OCTOBER, 1949 NUMBER 10

POWER REGULATIONS MUST BE ENFORCED

A reduction in power deliveries from one of the Commission's suppliers makes it necessary for all consumers to avoid wasting electricity. The Commission has advised the municipal systems that strict compliance with regulations respecting the use of electricity is essential.

Voluntary conservation is also needed. Homes, industries and farms can play their full part by reducing the use of electricity at all times, particularly during the hours of maximum use, from 10 to 12 in the morning and 4 to 6 in the afternoon.

Save Electricity At All Times!

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

Volume 36 Number 10

OCTOBER 1949

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SUBSCRIPTION: $2.00 PER YEAR

COVER SHOTS

THIS month's front cover illlustrates how Hydro harnessed the Madawaska River at the site of its Barrett Chute Generating Station near Calabogie. Looking at the peaceful scene depicted in the back cover illustration, it is difficult to realize the potentialities of the Ottawa as a great source of hydro-electric power.

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Picture of the Month



wo lumps please . . .

AN IMPORTANT DATE

WEDNESDAY, October 5, 1949, was an important date in the annals of Hydro in that it marked the official start of a tremendous and far-reaching program which, over the next ten or twelve years, will bring the benefits of 60-cycle power to consumers in the present 25-cycle areas of Ontario.

It is not a reflection upon the intelligence of any individual to say that few, with the exception of those most intimately associated with this program, could have a full appreciation of the exacting and detailed planning involved in such an undertaking. The actual changing over equipment in a consumer's home at the appointed time represents the culmination of a long series of carefully planned and consecutive operations almost too numerous to mention. Right down the line there has to be the closest liaison and coordination from the time when preliminary surveys in the various areas are made to determine how many pieces of equipment have to be changed over and the character of that equipment.

Then there is the ordering and stockpiling of the necessary equipment required in effecting the change-over, the detailed recording of each item, the setting up of mobile workshops, the close adherence to special accounting and field procedures associated with the Frequency Conversion Program, and the preparation of charts or maps of each area to indicate location of substations and transformers and the various streets served by these transformers. In carrying out this work, Hydro's Frequency Conversion Division maintains a close liaison with the various municipalities, while all consumers are warned well in advance of the day and the hour at which 25-cycle power will be cut off and conversion crews will move into their area to change over their equipment for operation at 60-cycle.

In embarking upon a program of such magnitude, it was imperative that a pattern of procedure be established and that the conversion crews have an opportunity of familiarizing themselves with that pattern and with certain problems which might arise in effecting the actual change-over. It was decided, therefore, that a preliminary, experimental change-over program be conducted in a section of East York.

This initial test program, conductd during recent months, would appear to have been well worth while judging by the way the conversion crews went into action in Scarborough on October 5 and carried out the first official change-over. They did their work with the smoothness and efficiency of a well-trained army.

And with each succeeding change-over in Scarborough and in the other municipalities to follow, that efficiency should become even more pronounced.

FUNCTIONS OF C.E.M.A.

RECENT meetings of the Canadian Electrical Manufacturers Association have focused attention upon the important objectives of this association and its functions as a central clearing house of information for and about the electrical products industry.

Established some four years ago, this organization is reported to represent more than 120 manufacturers who are responsible for 90 per cent of the industry's production. This industry, it has been pointed out, ranks fifth in Canada in the gross value of its output which, last year, amounted to well over $400,000,000 of products, exclusive of radios. During 1948, statistics show, approximately 53,000 people were engaged in this industry and the wages and salaries paid totalled $112,113,644.

So far as consumers are concerned, CEMA's continuing aim is, among other things, to increase the quality of electric service. It has directed attention to the cheap labour in the form of electricity that can be a deciding factor in the cost of farm products on world markets. As an example, the association states, an electric water installation will pump 45,000 gallons of water required annually by two people, two horses and a cow for as little as $1.50.

And, then, there is the question of wired homes. CEMA places the number of these homes in Canada at 2,262,00 and claims that thousands have inadequate or outmoded wiring systems. One result, it is emphasized, is a reduction in the available power when the limited number of outlets is overloaded with two-and three-way plugs.

The association is also making a close study of the lack of standardization in many divisions of the electrical products industry. These and other important studies it has undertaken through its technical personnel serve to accentuate the importance of CEMA's work in relation not only to the manufacturers but to the people who buy and use electrical appliances and equipment.

"Faith in Your Future"

Chairman Robert H. Saunders Predicts "Era Of Even Greater Achievement" For People Of Northwestern Ontario.

by

The Editor

A VIVID, verbal picture of the far-reaching transition brought about by Hydro in the northwestern section of Ontario was presented by Commission Chairman Robert H. Saunders at District No. 3, O.M.E.A. convention at Port Arthur on September 20 when he told an enthusiastic, overflow audience that "we, at Hydro, have great faith in your future."

Tangible evidence of that faith, the Chairman pointed out, was to be found in new power projects recently completed and in projects now under construction. Last year, he continued, Hydro had placed a fourth generating unit in service at the Ear Falls plant on the English River, bringing the total capacity of that plant up to 18,460 kilowatts (25,000 hp). Three great arteries of power now threaded their way through some 300 miles of bush, lakes and muskeg to serve the mining communities in the Red Lake, Woman Lake and Pickle Crow areas, as well as four townsites, the C.N.R. at Sioux Lookout and the paper mills at Dryden. The fourth unit at Ear Falls, he declared, paved the way for further increased production and development of Ontario's industries in the north.

At this point, Mr. Saunders directed the attention of his audience to the importance of the Ogoki and Long Lake diversions completed by Hydro a few years ago. The combined flow of these diversions averaged 5,000 cubic feet per second, he stated, and made it possible for the Commission to develop 360,000 additional horsepower at developed and undeveloped sites all the way from Lake Nipigon to the mouth of the St. Lawrence. As a result of the Long Lake diversion, he explained, it had been possible to construct the Aguasabon development. Actual construction of the project, continued the Hydro Chairman, had been started in the spring of 1946 and the plant was placed in operation last October, its capacity being 40,000 kilowatts (53,000 hp). The principal customer for power from that new plant, he said, was the LongLac Pulp and Paper Company which had built a new pulp mill at Terrace Bay—an area which was virgin bush only a few years ago and where today 500 men were employed. These men and their families together represented a total of over 2,000 people.

"Little wonder then," remarked Mr. Saunders, "that Hydro is proud of the amazing transition it has helped to bring about there, as it has in other parts of this district. My studies show me that Hydro's decision to proceed with the Aguasabon development was reached only after full consideration of the benefits inherent in the project. The fact that this development could be completed more rapidly than other sites was an important consideration which influenced the Commission's decision. Hydro was also aware of the fact that development of power at various points throughout the Thunder

(Continued on page 8)

THERE WAS general agreement that a picture of three chairmen and two managers would make a good photo finish to District No. 3 O.M.E.A. Convention at the Prince Arthur Hotel, Port Arthur. And so, the gentlemen lined up as shown above. Front row, left to right, Sam Ashton, Chairman, Port Arthur Public Utilities Commission; Robert H. Saunders, Chairman, The Hydro-Electric Power Commission of Ontario; and C. H. Moors, Chairman, Fort William Hydro-Electric Commission. Standing A. W. H. Taber, Manager at Fort William, and R. B. Chandler, Manager at Port Arthur.



WHEN THE results of the election of new officers were announce five smiling gentlemen, shown, above, proved to be the choice delegates attending ths District No. 3 O.M.E.A. Convention. Seated front, from left to right, are J. V. Fregeau, Chairman, Kenora Vice-President; Dr. M. P. Benger, Commissioner, Port Arthur P.U.C sident; and C. H. Moors, Fort William, Director. Standing are J. D lips, Reeve of Schreiber, and Dan Foran deputizing for Mayor Holmes, Fort Frances, who, like Reeve Phillips, was elected as a D





ACCORDING TO Albert Jennings (centre) of East York, Hydro's "Three Musketeers" have been initiated into the Order of the Moose (background). The other two "Musketeers" are C. H. Moors (left) and Jack Pattison (right) of Fort William. The occasion was recorded by a Hydro News' photographer at District No. 3 O.M.E.A. convention while delegates were visiting Pine Portage.



PORT ARTHUR'S Prince Arthur Hotel was the scene of considerable activity when delegates to District No. 3, Ontario Municipal Electric Association assembled for registration prior to the start on the business sessions. The delegates were exchanging greetings when the Hydro News' photographer focused his camera on this scene. Among those identified are Ted Teckoe, Jr., George Hutcheson, Harry Foy, "Smokey" Reynolds, W. R. Mathieson, M. W. Rogers, J. R. Pattison, W. J. Miller, and Eric Martin.

POKING HIS camera over the balcony as he looked down upon delegates gathering in the rotunda of the Prince Arthur Hotel for District No. 3 O.M.E.A. convention, the Hydro News' photographer got this arresting photograph shown below.



WHEN THE delegates visited Pine Portage where they inspected the new development, now under construction, they also had an opportunity of sampling the fine food which is served to the workmen in the camp's modern cafeteria.



"C" Day Planning

by
Grace J. Carter
News Editor

Accounting And Field Procedures For Frequency Conversion Program Outlined At A.M.E.U. Conference

ACCOUNTING procedures and planning for "the basic method of attack in readiness for "C" (conversion) day, highlighted the conference of the Association of Municipal Electrical Utilities, Accounting and Office Administration Section, Western Ontario Division, at the Elmwood Hotel, Windsor, on September 23.

It was pointed out that the Commission is mustering all forces to speed up the preliminary work and at this A.M.E.U. meeting, E. H. Banks, the H.E.P.C. Comptroller, outlined various problems pertaining to accountnig procedures which municipal commissions were likely to encounter.

The other speaker at the afternoon session was H. J. Edwards, an H.E.P.C. Area Planning Engineer, who stated that schedules of tentative dates of conversion had been prepared by the Frequency Conversion Division Planning Section and issued to all departments and municipalities in chart form. The first schedule, he said, was prepared for the entire 25 and 66⅔ cycle system in Southern Ontario and was based on the rate of conversion necessary to complete the job by 1960.

Supply Expenditures

Edgar Wallace of the Windsor Utilities Commission and D. N. Durward, Secretary of the Galt Public Utilities Commission presided over the conference, while other speakers included S. L. Fraser, Public Utility Representative from Underwood Limited, and Rev. H. M Paulin, B.A., D.D., pastor for over thirty yaers at St. Andrews Presbyterian Church, Windsor.

In his address, Mr. Banks explained that those expenditures connected with the supply facilities would be incurred mainly by the Engineering Branch of the Commission, while those connected with the facilities of the ultimate consumer would be divided into four classes: Those incurred by the F.C.D. in respect to bulk materials, meter rewinds, frequency conversion, engineering and general services; cash settlements made to manufacturers of dual frequency motors and lighting ballasts; those incurred by the contractor in respect of miscellaneous material and inventory, processing and conversion labour.

The expenditures in connection with the supply facilities, the speaker said, would be controlled under the Ontario Commission's normal engineering, purchasing and work order accounting system, and the expenditures for the consumer facilities would be incurred by the Hydro and its conversion contractor.

It was pointed out that consumers could convert their own equipment by arrangement with the Frequency Conversion Division, in which case a cash settlement would be made. The settlement, Mr. Banks said, would be consistent with the estimated cost of conversion less the levy where applicable.

In covering the costs to be borne by the municipalities, the Comptroller reviewed memoranda One to Five that had

(Continued on page 22)



★

IN THE upper illustration E. L. Gothard, Brantford, congratulates Edgar Wallace, Windsor, the recipient of a handsome leather club bag presented on behalf of the A.M.E.U., Western Ontario Division, by C. E. Hodgson, H.E.P.C. Accountant for Western Region. In the lower picture, J. Clark Keith (left) of Windsor, President of the A.M.E.U., discusses conversion problems with E. H. Banks, H.E.P.C. Comptroller.



BEFORE

Avenue Road, Toronto, between St. Clair Avenue and Heath St. in December, 1945, before road was widened and wood poles removed.

Underground Movement

Present Plans Of Toronto Hydro-Electric System Call For Removal Of Some 200 Miles Of Lines From Streets



AFTER

Same point on Avenue Road in June, 1946, showing the transformation wrought in appearance of the street within few months.

by **C. G. W. MacIntosh**
Hydro News

WHILE power lines, for the most part, are still "up in the air" in Toronto—as they are in most large centres in Canada and the United States—an underground movement is steadily gaining momentum.

For example, present plans of the Toronto Hydro-Electric System, approved in principle by the City Council, mean that some 200 miles of lines which now wind their way through the main traffic arteries on wooden stilts, may eventually disappear underground.

However, this transformation cannot be effected by waving a magic wand. It's a big job, a long job, and a costly one.

Engineers of the Toronto Hydro believe it would take many years to get these 200 miles of primary lines placed underground and that it would cost approximately $26,000,000. This program provides for the replacement of the big wooden poles with small, concrete poles and the latest type of lighting fixtures.

Only a few scarcely visible wires would connect up the lights on these poles. The heavy wires would be carried in the underground ducts.

What would it cost if all power wires in Toronto were placed underground? Engineers estimate a possible expenditure of $125,000,000 for there are some 575 miles of streets in Toronto.

While a major, long-range program has been endorsed in principle, Council has approved a program which will result in 8 miles of overhead pole lines in the downtown area being removed and primary wires placed underground.

Cost of this program will exceed $1,000,000, with Toronto Hydro and the City of Toronto paying on the basis of $25 and $3 per foot respectively.

Whenever street widening is undertaken by the city, this automatically involves the removal of wooden poles. A typical example is to be found in the section of Avenue Road that was widened from St. Clair to Lonsdale Road and Oriole Parkway. The big wooden poles and overhead wires were removed and neat concrete poles with modern lighting substituted while the heavy wiring was placed in underground ducts.

Since that time, similar work has been done on Dufferin Street, University Avenue, Jarvis Street, River Street, Wellesley Street, Bedford Road and St. George Street, simultaneously with the city's street widening program.

In the near future, it is anticipated that wooden poles on College and Carlton Streets, from Spadina to Sherbourne, will be removed. Also on the present list are these poles on Dundas, from McCaul to Jarvis and on Queen, from McCaul to Bay.

The second priority list includes removal of wooden poles from the area bounded by Jarvis, Carlton, University Avenue and Queen's Quay.

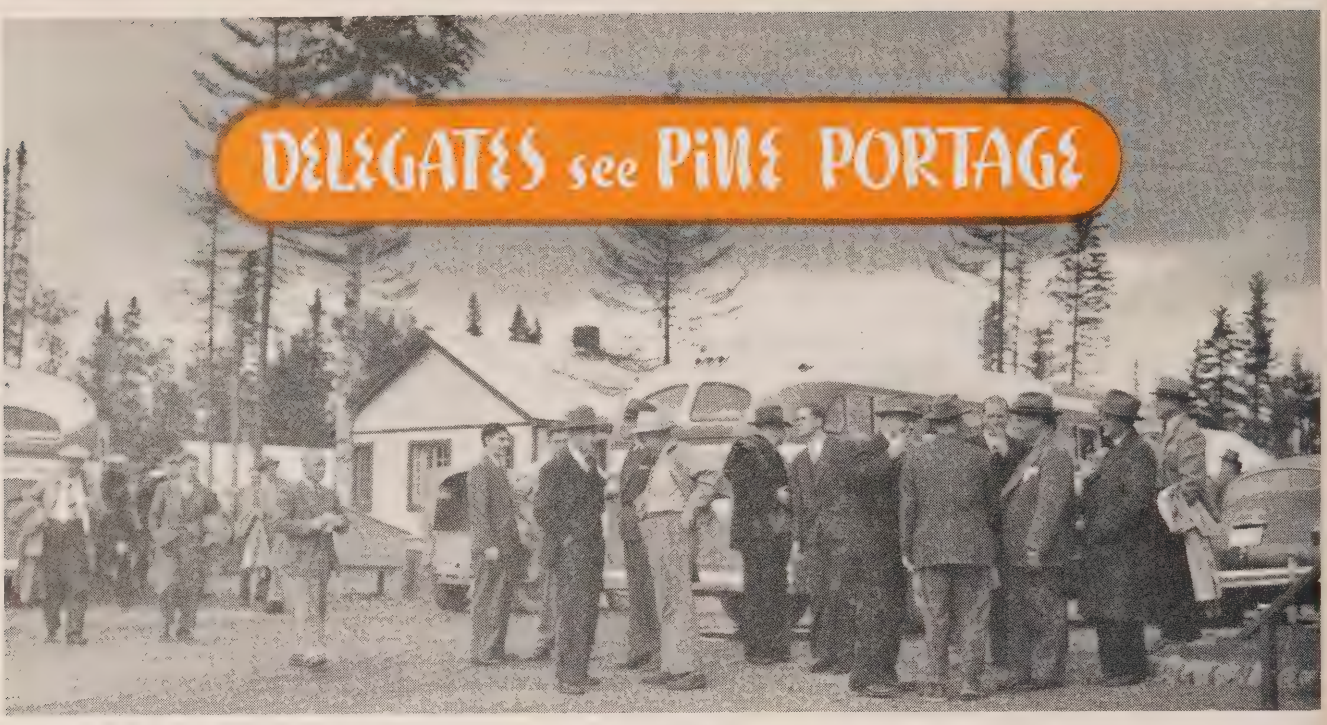
These facts indicate that Toronto is not lagging behind especially when it is remembered that in cities like Montreal, Baltimore and Chicago not more than ten percent of the streets have power lines placed underground and wooden poles removed to date. Montreal, it is reported, has been working on its program for nearly half a century.

With these, and other improvement plans now taking definite shape, Toronto, within the next fifty years, is likely to occupy a pre-eminent place among the beautiful cities of the world.

NEW STATION SCHEDULED FOR OPERATION BY 1951

A NEW 60-cycle transformer station is to be constructed in Windsor, Commission Chairman Robert H. Saunders announced recently. Completion date for this 54,000-kva. project has been scheduled for the spring of 1951.

Filling a twofold need, the new station will take care of the growing demand for power in the Windsor area, and also be of great assistance in the carrying out of Hydro's frequency conversion program in that city. Present plans call for conversion at Windsor to begin in May, 1951, shortly after the date of initial operation of the transformer station, which will progressively provide 60-cycle power to the present 25-cycle Windsor areas as they are changed over.



DISTRICT NO. 3 O.M.E.A. delegates arrive by bus at Pine Portage.

(Continued from page 4)

Bay district was vital to the progress and prosperity of the district as a whole.

"I think you will readily agree," continued the Hydro Chairman, "that it is essential that we make every effort to open up this district over a wide area rather than concentrate on one or two points. Taking a long-range view of the situation, I am confident that great benefits will ultimately accrue to all, particularly the flourishing cities of Port Arthur and Fort William. Another point which I might mention in connection with the Aguasabon development was the fact that we were able to locate the main dam adjacent to the LongLac mill. Our forebay in this way provides a ponding base for logs floated down from timber cutting areas."

Pine Portage Development

Mr. Saunders next directed attention to the new development now under construction at Pine Portage on the Nipigon River. It was expected, he said, that this plant would be generating 60,000 kilowatts (80,000 hp) before the end of next year. He pointed out that provision was being made for ultimate total capacity of 120,000 kilowatts (160,000 hp) at Pine Portage. Power generated at that development, he continued, would supplement the output at both the Cameron Falls and Alexander plants and would provide still greater impetus to industrial activity in the thriving lakehead area.

At another point, Mr. Saunders stated that the recent acquisition of the Kaministiquia plant (27,600 kilowatts or over 36,000 hp) meant that the Commission was now in a position to amalgamate all the power resources in northwestern Ontario into one system. In addition, Hydro would have complete control of the water storage and flow of the Kaministiquia River which would be of considerable value when they proceeded with the Silver Falls development, several miles upstream. Hydro would also be able to use water available in the Nipigon and Kaministiquia watersheds to much better advanage than would be the case if these waters were controlled and operated by different parties.

The Hydro Chairman predicted that the people in the northwestern section of Ontario could look forward to an era of even greater achievement. He pointed out that conferences were now in progress in connection with power developments on both the English and Winnipeg Rivers. Boundary Falls, located on the Winnipeg River, three miles from Manitoba, was estimated to have a potential capacity of 112,500 kilowatts (150,000 hp). Kettle, Oak and Manitou Falls, on the English River below Ear Falls were expected to produce over 75,000 kilowatts (100,000 hp).

Interchange Of Power

"Of the utmost significance, however, is the consideration being given to the possibility of making Hydro power, wherever generated, interchangeable throughout Ontario," continued the Chairman. "In fact, it is quite within the realm of possibility that facilities will be provided, at some future date, for the interchange of power between Ontario and neighbouring provinces of Canada as well as certain sections of the United States.

Mr. Saunders pointed out that the first step in that direction would be taken at the LaCave development which, due to its unique location, would be the first link between the great southern and northern power systems, presaging the day to which the Commission had long looked forward when, through the tie-ins of a closely knit grid system, Ontario would be joined together by great arteries of power.

In his address to the delegates, W. Ross Strike, K.C., Second Vice-Chairman of the H.E.P.C. emphasized the tremendous "economic lift" Ontario was receiving from Hydro's construction and frequency conversion programs.

Discussing the power supply situation, Mr. Strike expressed the belief that "if we get some of the breaks we should be in better shape this year than we were last year." He pointed out that the Hydro staff had recognized that shortages of power were bound to occur pending completion of new developments. They had gone to the municipalities and told them of the problem, indicating that there were two ways in which it could be met. Hydro could advise all old customers that they would continue to receive power and tell new customers that they could not have power. "If, on the other hand," said Mr. Strike, "we continued to take new customers and rationed power we could maintain the economy of the province on the highest possible level. The municipalities were practically unanimous in the decision to go ahead and take on new customers. The government of the province gave us the same answer. The labour unions who were approached also gave the same answer as did the manufacturers. Everybody agreed to co-operate, to take a little of the hardship so that everybody would

(Continued on page 10)



LEFT: DISTRICT No. 3 O.M.E.A. delegates made a tour of Hydro's new devel ment at Pine Portage on the Nipigon River. This photograph shows a sec of the main dam as it looked on September 22.

LOWER LEFT: This view of Pine Portage includes a section of the pow house which is now taking shape. The concrete conveyor and camp buildi can be seen in the background.





ABOVE: A section of Bai Bridging was being plac in position at the Pi Portage main dam structu when the photographer g this interesting shot.

CIRCLE: WHEN Hydro Cha man Robert H. Saunde excused himself and we off "on his own" at Pi Portage, the Hydro New photographer trailed hi and saw him climb lad ders and on to scaffol ing to chat with many the workmen. Seizing h opportunity, the photo grapher managed to "snea up" and get this picture the Chairman and one the workers.

Among Those Present

When registration proceedings at District Number 3 O.M.E.A. Convention at Port Arthur had been completed, the following had signed the book:

A. R. Ascough, Reeve, Jaffray and Melick
Sam Ashton, Chairman, Port Arthur P.U.C.

M. P. Benger, Commissioner, Port Arthur P.U.C.
K. N. Bodkin, Consumer Service Superintendent, Port Arthur

G. R. Carmichael, Mayor, Kenora
R. B. Chandler, Manager, Port Arthur P.U.C.
G. E. Chase, Manager, Bowmanville P.U.C.

E. B. Easson, H.E.P.C. of Ontario, Toronto

H. R. Fardoe, Moloney Electric Company, Toronto
D. G. Foran, Fort Frances P.U.C.
F. T. Foy, Ferranti Electric Ltd., Toronto
J. V. Fregeau, Chairman, Kenora P.U.C.

M. A. Grynol, Fort Frances

W. H. Hamilton, Treasurer, Dryden
B. V. Holmes, Mayor, Fort Frances
L. B. Hulko, Area Manager, Port Arthur
G. F. Hutcheson, Chairman, Huntsville P.U.C.

O. S. Jackson, Council, Dryden
A. G. Jennings, East York

C. L. Little, Automatic Electric (Canada) Ltd., Winnipeg
F. G. Lovelady, Commissioner, Port Arthur P.U.C.

A. W. Manby, H.E.P.C. of Ontario, Toronto
E. R. Martyn, Consumer Service Engineer, Port Arthur
W. R. Mathieson, Assistant Secretary, O.M.E.A., Toronto
M. J. McDonald, Commissioner, Port Arthur P.U.C.
M. J. McHenry, H.E.P.C., Toronto
C. H. Moors, Fort William H.E.C.

D. I. Nattress, Regional Manager, Port Arthur
H. A. Nymark, Dryden

I. L. Obergh, Secretary-Treasurer, Port Arthur P.U.C.

J. R. Pattison, Commissioner, Fort William H.E.C.
J. D. Phillips, Reeve, Schreiber
L. T. Poulter, Northland Machinery and Supply Company, Fort William

William Rattray, Hydro News, Toronto
R. S. Reynolds, Manager, Chatham P.U.C.
M. W. Rogers, Manager, Carleton Place P.U.C.

W. Schutte, Municipal Clerk, Twp. of Scoble, Fort William
E. Sherwood, Dryden
J. L. Skillen, Manager, Dryden
J. N. Stanley, Commonwealth Electric, Welland
W. R. Strike, H.E.P.C. of Ontario, Toronto
J. R. Sullivan, Manager, Woodstock P.U.C.
H. Swain, Chairman, Nipigon H.E.C.

A. W. H. Taber, Manager, Fort William H.E.C.
R. A. Taylor, Superintendent of Utilities, Fort Frances
F. Traube, Sioux Narrows

E. A. Vigars, Assistant Manager, Port Arthur P.U.C.

A. F. Westran, Area Manager, Fort Frances

R. E. Young, Etobicoke H.E.C., Toronto

FAITH IN FUTURE

(Continued from page 8)

get the best possible use from the supply of power available."

Continuing, Mr. Strike said that the result of that co-operation was to be found in the way in which the economy of the province had been maintained at the highest level, despite the shortage, through close teamwork between labour, manufacturers and others. Everybody, he said, had played ball.

"I feel," declared Mr. Strike, "that the people of the province of Ontario have given a wonderful lesson to this country, if not the world, by showing what can be done when everyone co-operates. Certainly, we will have very little difficulty this winter if the people continue to give that kind of co-operation in voluntarily saving power so that we can use our resources to the best possible advantage."

Stresses Co-operation

George F. Hutcheson, President of the O.M.E.A., Huntsville, strongly emphasized the importance of the closest co-operation being maintained between the O.M.E.A. and the A.M.E.U. He also reminded his audience that there was a tendency on the part of many people to take for granted the privileges they enjoyed and to forget the many sacrifices which had been made to obtain these privileges.

At another point, the O.M.E.A. President directed the attention of his audience to the need for conserving Canada's great natural resources such as water power, forests, fish and others. Mr. Hutcheson declared that it was a matter of vital importance to look ahead and appreciate what the water power resources meant in relation to the future development of Canada.

Among the other speakers taking part in the proceedings were J. R. Pattison, the Fort William Hydro Commission who presided; Mayor F. O. Robinson, M.L.A., Port Arthur; Mayor H. Badanai, Fort William; A. W. H. Taber, Hydro-Electric Commission, Fort William; J. E. Teckoe, Jr., Public Utilities Commission, Galt; Sam Ashton, Public Utilities Commission, Port Arthur; F. G. Lovelady, Public Utilities Commission, Port Arthur; C. H. Moors, Hydro-Electric Commission. Fort William; and Dr. M. P. Benger, Public Utilities Commission, Port Arthur.

The following District No. 3 officers were elected for the ensuing year: President, Dr. M. P. Benger, Port Arthur; Vice-President, Joseph Fregeau, Kenora; Directors, C. H. Moors, Fort William; Mayor M. B. Holmes, Fort Frances; and John Philips, Schreiber.

wo-Stage Operation

HASTENED by the introduction of an unusual two-stage closure operation, work on the two major dams at Des Joachims is progressing rapidly.

In the early days at Hydro's senior power project, some laymen rather sheepishly confessed that they were a little confused. Their first view of the development, they said, left them with the impression that they were looking at a jigsaw puzzle on a monster scale.

One point bothered many visitors particularly: "Why the big openings in the Ontario end of the main dam?"

Dams were supposed to hold the water back, they asserted, but here one saw the Ottawa flowing through a series of 40-foot apertures in the long structure—sometimes at the rate of as much as 80,000 cubic feet per second.

Why? An interesting story hinges on the answer to this question.

Actually, these openings or diversion

by
Boyd L. Graham
Hydro News

sluices—as they are sometimes known—were incorporated as an essential part of the master plan for the development. Instead of excavating a new channel to carry the water, while construction of the 2,400-foot main dam and the big powerhouse was under way, Hydro engineers introduced the diversion sluiceway method of passing the river.

Then, by means of cofferdams, or rock-filled cribs, the flow of the Ottawa was diverted from one channel of the river to the other at will, allowing work to proceed in the "dry." For example, during construction of the Ontario end of the dam, in which the sluiceways were incorporated, the river was diverted through the interprovincial and Quebec channels. When this phase of construction was completed, the water was then diverted back into the Ontario channel, and through the sluices left open for this purpose.

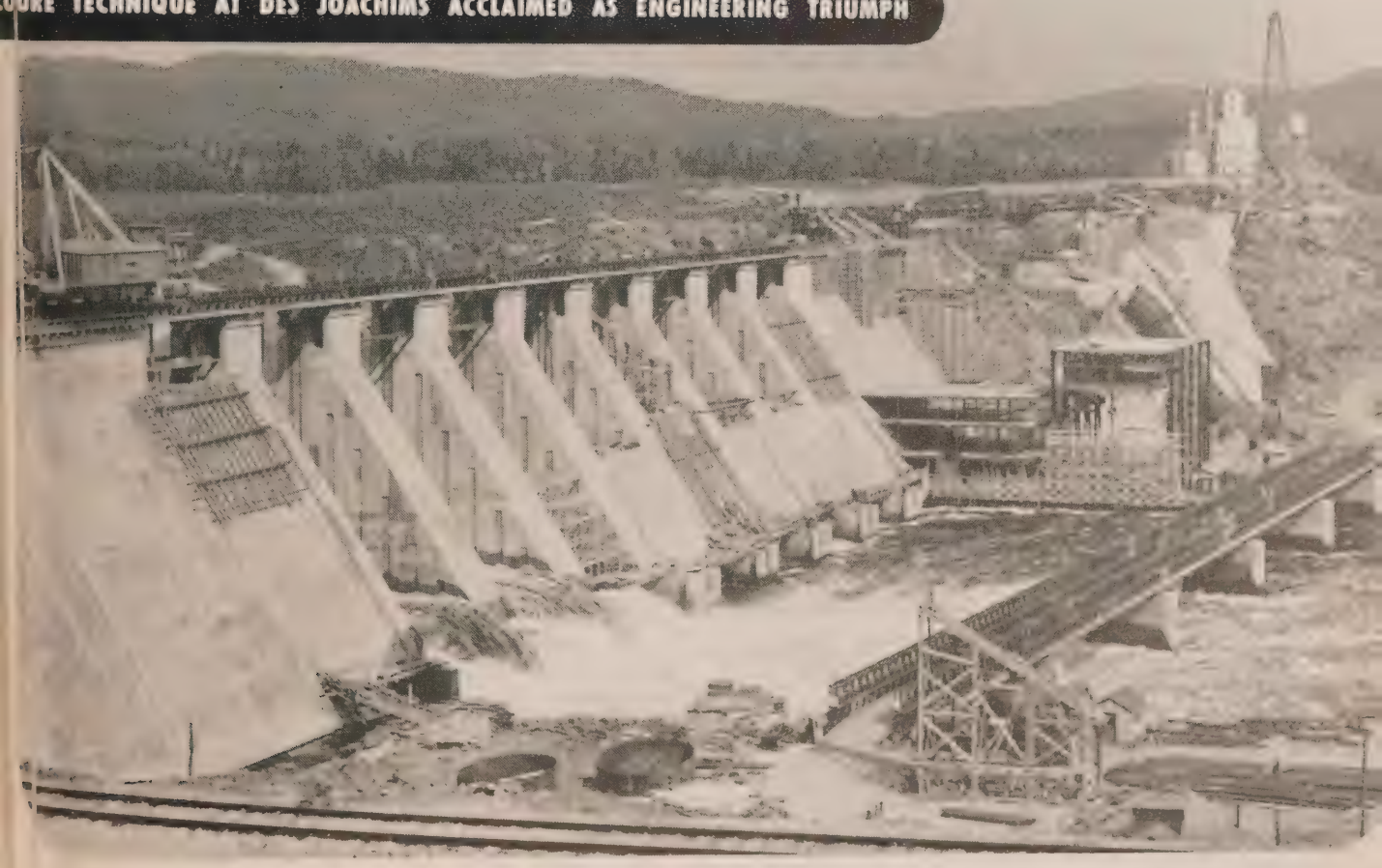
However, it was necessary to find some means of closing these openings after construction of the dam and powerhouse was well under way.

Several Methods Studied

Several methods of closure were studied in planning a technique which would fulfil the particular requirements at Des Joachims. This involved finding a means of conveying sufficient water for the operation of plants located downstream while simultaneously closing up the diver

(Continued on next page)

OURE TECHNIQUE AT DES JOACHIMS ACCLAIMED AS ENGINEERING TRIUMPH







OPEN SEASON

SHORTLY before 2 p.m. on September 15, visitors began to assemble on the access bridge at Des Joachims to witness the closure of the last sluiceway opening in the main dam. Precisely at the hour set by Project Manager Angus Richardson, the last three shutters were lowered into the frame already in position across the opening. Thus, the flow of the Ottawa River through the main dam was finally stopped. Now completely diverted through the control dam into McConnell Lake the river would rejoin the old river bed at the upper end of the "deep river" section north of Des Joachims village. When the flow was shut off, the water cascaded down the river bed leaving bare rocks and shallow pools in the immediate vicinity of the dam and access bridge, upper photo. Many fish, including a shoal of large sturgeon, were trapped in these pools, but not for long. Male witnesses of the final closure risked life and limb to "rescue" the piscatorial prisoners. Reaction of the group in the lower picture to the rescue efforts to two members of the party seems to deny the ancient allegation that "comparisons are odious!"

TWO-STAGE OPERATION

(Continued from previous page)

sion openings in order to create a forebay or headpond.

In evolving a satisfactory closure system, Hydro's engineers first built a wooden scale model which underwent a series of exhaustive tests in the hydraulic laboratory at the University of Toronto. During these tests, answers to such problems as the maximum forces which would be exerted on the closure equipment, were sought and found.

When the experimental phase was completed, engineers then set out to put their findings to practical use. In the designing and building stages, representatives of the Commission's Generation and Construction Departments worked in close collaboration with engineers and officials of the Dominion Bridge Company. This firm actually carried out the fabrication of the closure equipment, including a gantry hoist or crane and three steel gates. Each of the steel gates consists of a 50-ton steel frame and five steel shutters, weighing 4½ tons apiece.

Handling Equipment

In undertaking the closure operation at Des Joachims main dam, workmen erected a Bailey Bridge runway over the openings. Thus, a track was provided for movement of the handling equipment, comprising the gantry crane and two tender cars to hold the shutters (when not in position) as well as other miscellaneous equipment.

Completion of the Bailey Bridge runway paved the way for an interesting sequence of activity. After the first steel frame had been lowered into position by the gantry crane, situated on the overhead Bailey Bridge runway, the five steel shutters were dropped into the frame. This blocked off the water and diverted it into the other openings. With the water shut off behind the gate, workmen commenced erection of a wooden form preparatory to the pouring of a "lift" of concrete. Meanwhile another gate was placed into position in another opening. By this time the third gate had been lowered, pouring of the concrete lift in the first opening was complete. The first gate was then raised and moved to another opening where the same process was repeated.

Today, the visitor no longer feels confused when he looks at the big power dam. The pieces of the giant jigsaw puzzle are being fitted together as pouring of the final lifts in the diversion sluices approaches completion.

Some conception of the magnitude of the closure operation is afforded by the fact that between July 8—date of the first closure—and September 15, when the final closure was accomplished, a total of 44,500 cubic yards of concrete were poured.

As each lift—varying in height from 16 to 40 feet—was poured into the open-

(Continued on page 20)



★

Hydro's Change-Over Crews Go Into Action In Scarborough Marking Official Start On Frequency Conversion Program

★

by

C. G. W. Macintosh
Hydro News

HYDRO'S long-range and far-reaching frequency conversion program got away to a smooth, fast-moving start on Wednesday, October 5, when the equipment of more than 300 consumers in Scarborough was changed over from 25- to 60-cycle.

The value of the preliminary experimental change-over program conducted in a section of East York during the spring and summer months was reflected in the highly efficient way in which the conversion crews went into action.

The East York undertaking had familiarized these crews with field procedures and some of the problems which might be encountered.

All the technicians had been thoroughly briefed in advance and when "attack" orders were received at the 9 a.m. zero hour when the power was cut off, every man knew his job.

The area completed on the first day included St. Clair Avenue west of Kingston Road to Midland Avenue; Kingston Road, Stop 15 to 17; Brooklaw Avenue, south of Kingston Road; Meadowvale Crescent, Woodside Avenue, St. Quentin Avenue, Thatcher Avenue, Beverley Boulevard; Andrew Avenue, Walton Avenue, Jeanette Avenue, Glenmount Avenue, and St. Augustine's Seminary and the National Research Council, Kingston Road.

All householders, industries and commercial premises in that area were advised in detail in advance of the plans which had been made and they were on hand to welcome the "friendly invaders."

All homes and business places had been surveyed and an inventory of the electrical equipment made. These preliminary steps helped to smooth the way for a rapid advance.

The stockpile of conversion materials required to carry out this work was placed on order several months ago to assure delivery in time for the change-over. The survey in the Scarborough area showed that approximately 81 percent of the 10,340 consumers own washing machines; 57 percent, electric clocks; 42 percent, radio-phonographs; 39 percent, refrigerators, and 28 percent, electric heating apparatus.

During October, cut-overs are scheduled at weekly intervals and by the end of the month it is estimated that the equipment of an estimated 1,150 consumers will have been changed over, and it is anticipated that the entire conversion program in the Scarborough area will have been completeted by early in the New Year.

Getting back to the initial cut-over, a Hydro News observer in the field was amazed at the speed and efficiency with which the work was carried out. Big trucks pulled up to homes and technicians, smartly dressed in white coveralls, quietly and courteously entered homes and went about their tasks. Oil burner motors were changed quickly and primary controls were replaced. Washing machine motors were changed on the spot, or in the case of older models, these washers were taken away and converted at the contractor's central conversion shops.

In many cases, the same applied to refrigerators. The owners' machines usually were changed and back in the homes within a day. Radio-phonographs, electric fan motors, doorbell transformers and other frequency sensitive equipment were changed over in a competent, methodical manner.

Consumers were delighted with the efficient way in which the change-overs were completed. Several openly expressed their appreciation and thanks. They were impressed, too, with the courtesy of the technicians and the capable manner in which they dealt with special problems.

In commercial establishments, such as gas stations and restaurants, speedy change-overs were made. At service stations, operators found that their automatic fuel pumps—their "bread and butter"—were only out of service for a short time. The same applied to refrigeration units in restaurants where the utmost speed, consistent with good workmanship, was employed.

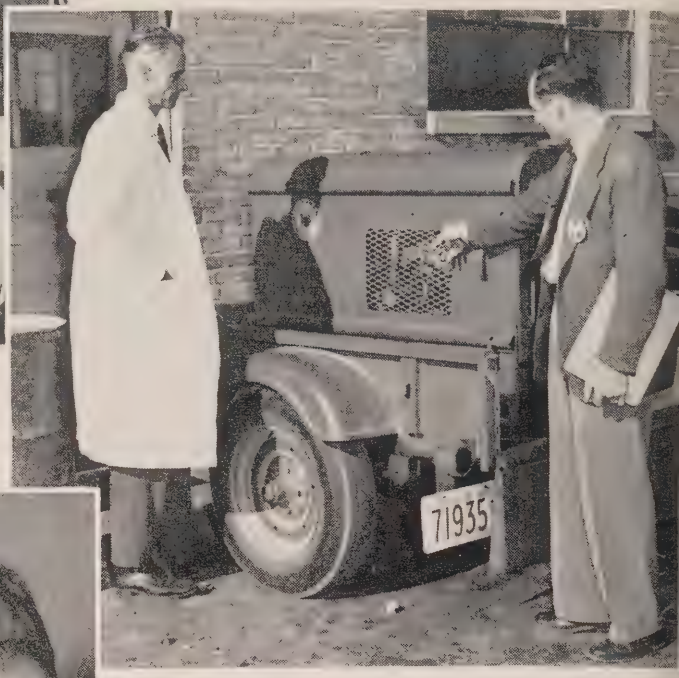
In the next ten years' time the benefits of 60-cycle power will be extended to upwards of 800,000 consumers of Hydro. It will involve the conversion of approximately 1,800,000 motors ranging from midgets to giants in size. These will include at least 550,000 washing machines, 300,000 electric refrigerators, 100,000 furnace blowers, 167,000 industrial and 185,000 commercial motors.

Such, in brief, is the magnitude of the program on which Hydro forces have embarked, and which was officially launched by the change-over on October 5, 1949, in cut-over area No. 1 in Scarborough.

LEFT—CONVERSION crews engaged in changing over the motors in automatic fuel pumps at a Scarborough Township service station.



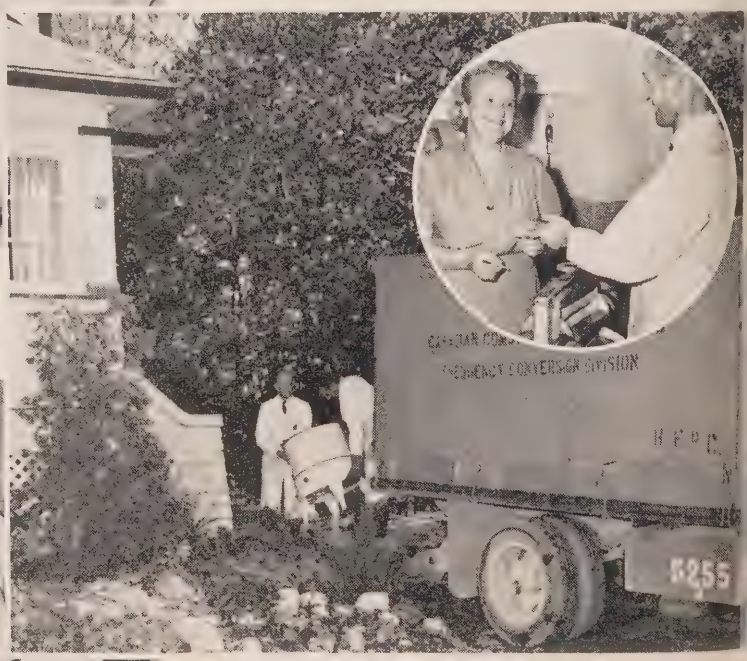
RIGHT—FIELD Supervisor Monty Reed explains operation of a gas-operated mobile generator which supplied part of the electrical energy for operation of garage equipment before all motors were converted from 25 to 60 cycles.





LEFT—MRS. Ellen Farr watches Bruce Van Dyke, left, and Blake McCaig as they change the motor of the radio-phonograph in her Scarborough home.

BELOW—WILLIAM Scott, right, a conversion mechanic, replaces the old motor in a domestic oil burner, while Harold Peterson installs a new primary control.





ABOVE—WASHING machine, converted at the conversion field office is returned to the owner, Mrs. W. E. Goforth, who is shown (inset) handing back the receipt for her machine.

ADDITIONAL PICTURES ON PAGE



PASSING MOTORISTS get a fine view of Des Joachims from these lookout points on Highway 17, shown above. Chief Guide Gowan Guest, (in the inset photo) adds a sketch to highlight his description of a development feature for the information of one of the many interested parties who toured the project during the past summer.

Hospitality PLUS

by
Boyd L. Graham
Hydro News

ALONG Highway 17, opposite the scattered, hillside village of Rolphton, two canopied lookouts have become popular stopping points for passing motorists.

Here, during the past summer, thousands of vacationists and tourists paused for a look at the towering outlines of the 2,400-foot main dam of Hydro's Des Joachims development.

From these convenient vantage points, they could see hundreds of men, dwarfed by the immensity of the project, clambering over the great wedge of concrete which now spans the wide valley of the Ottawa River. For many, the lure of such activity was too much. They weren't satisfied with just a long-range view—they had to have a closer look at the big dam.

This involved a little difficulty, including admittance at the main gate, while a member of the staff was recruited to conduct a tour of the project for the visitors.

Thus, as the number of visitors increased, it was decided to inaugurate a "Guide Service" this summer.

Four Guides

Four young men were carefully selected as guides from a group of applicants. Gowan Guest, of Toronto, a fourth year student of political science at the University of Toronto, was chosen as Chief Guide while two other University of Toronto men—John Ray and Hugh Sykes worked with him. Alex Langford, a student at University of Toronto Schools was the fourth member of the quartet.

To familiarize themselves with some of the important phases of Hydro operations, they spent a week at Head Office in Toronto where they studied pamphlets and movies to gain general background. This method of indoctrination was supplemented by visits to Hydro's generating stations at Queenston and DeCew—Scarborough Frequency Changer Station—the Hydro laboratory on Strachan Avenue in Toronto—Leaside Transformer Station and substations. They were even present at the first changeover of East York consumers from 25 to 60 cycles.

Arriving at Des Joachims late in May, they were taken in hand by Senior Resident Engineer, "Bill" Hogg and Construction Engineer Peter Allen for thorough "briefings" on the big project itself. [illegible] solo tour. From that date until summer tours were discontinued in September, Des Joachims guide service was provided for a total of 8,132 visitors.

50 Special Parties

Of this number, 6,592 were casual visitors who "dropped in" unannounced. In addition, 50 special parties—including 9 Head Office groups—with an individual membership totalling 1,540, gave Des Joachims the distinction of being one of Ontario's major attractions for tourists this season.

First special party to tour the project after guide service was initiated, included members of the Ottawa Valley Dental Association. Des Joachims also received a visit this summer from some members of the U.S. Congressional Committee on Atomic Energy headed by Senator William Knowland, of California.

One day, Rt. Hon. J. L. Ilsley, Canada's wartime Minister of Finance, was taken on a tour of the project. On another occasion, four young men from Paris, France, on a canoe trip from Three Rivers, P.Q., to New Orleans, were [illegible] visitors.

July, with a total of 2,351 guests, set a record for the season. The July figure [illegible] down and it was found that

(Continued on page 18)

Courteous Guide
Service Provided
Over 8,000 Visitors
Des Joachims "Jo

Courteous Guide Service
FOR THE PEOPLE OF ONTARIO
DES JOACHIMS ILLUSTRATION
THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



RIGHT—CHIEF Guide Gowan Guest greets a group of Des Joachims visitors and presents a brochure describing the project.



LEFT—BEFORE conducting a tour for the party, the guide gives a brief outline and some interesting facts about the "job" with the aid of topographical map along one wall.







BELOW—JOHN Ray answers questions raised by this group during three-hour tour of development arranged for larger parties.



RIGHT—VISITING party emerges from Des Joachims Reception Centre located near main gate.

E—VISITORS get a fine view of construction o large windows in one corner of Re- pon Centre indicated by Guide John Ray.



LOW—FIRST stop at main lookout point, left, ve group fine upstream view of main dam as hie Guide Guest hoists a junior visitor aloft r. better look at the big structure. At another mpr ant lookout point, right, this party has an ppr unity to look over the powerhouse area while eit guide draws attention to construction progress.



ABOVE—CONCLUDING tour, visitors stop to watch building of downstream cofferdam prior to deepening of the tailrace section.

HOSPITALITY PLUS

(Continued from page 15)

55 percent were residents of the Ottawa Valley, 25 percent were from other parts of Ontario while the remaining 20 percent had come from other provinces as well as United States and Great Britain.

Most popular visiting days were Saturday and Sunday when the weekly average reecived a substantial boost. During July, the average every seven days, was well over 700. One hot Sunday during this month, with the thermometer hovering around 90 degrees, 418 visitors came to call!

Reception Centre

But hot weather or cold, each guest received the same courteous treatment from the guides. Starting point of each tour was the Reception Centre. Accommodated in one end of an administration building, near the main gate, the Reception Centre was planned to command a fine view of the development. Provided with comfortable furniture and tastefully decorated in green, the Centre offered a cheerful welcome to visitors and a place to relax while awaiting the commencement of the next scheduled tour.

As a prelude to each tour, guides furnished their guests with brochures describing the development and what it would mean to the people of Ontario. At the same time, each visitor was made more familiar with the general layout of the project by a short talk by the guide. A topographical map, along one wall of the Reception Centre, was used to illustrate these brief lectures.

From Monday to Friday, the tour schedules included seven one-hour tours which covered the "heart" of the project —a distance of over seven miles. In addition, visitors had the opportunity of taking one of the three complete tours each weekday lasting 1½ hours. These longer trips included a visit to the heart of the project and the McConnell Lake control dam and covered a distance of some 15 miles.

On Saturday, the program was varied slightly to include 12 short tours and one complete tour. A further change in the Sunday schedule provided for 14 short tours.

Special groups were taken on three-hour trips which permitted a detailed inspection of the development. A special sound truck was used in connection with these special tours enabling the guides to point out interesting features visible at each lookout point en route.

Many Questions

Questions—thousands of them—were aimed at the guides during the 517 tours they conducted this summer. Some of the queries could not be answered "on the spot." For example, one gentleman asked: "How many rivets in a penstock?"

The answer to this conundrum was provided for the visitor before he left. He was informed that each penstock has approximately 26,000 rivets.

Another guest asked the weight of the Bailey Bridge concrete conveyor on the top of the main dam. The answer to this question—1,309 tons—was also provided in short order.

Other questions demonstrated the importance of the guide service in clearing up some misconceptions regarding the development of hydro-electric power.

For example, such queries as "Will they take all the electricity out of the water here, or will they leave some in for the dams below?" received patient and informative answers.

Indicative of the excellent job of public relations these guides performed for Hydro this summer was the offer of hospitality extended to them in return for their courteous treatment of each guest.

These offers ranged from invitations to visit a dozen different towns and cities in Canada—from their respective mayors —to the reaction of a California Senator who offered a "whole day in Washington on me, during your honeymoon." Unfortunately, the guide wasn't even engaged.



TWO "HONOURABLES" IN CHALLIES FAMILY

GEORGE S. CHALLIES, K.C., nephew of Hydro's First Vice-Chairman, the Hon. George H. Challies, was recently appointed to the Superior Court of Quebec. One of the youngest judges to preside over a High Court, he is the second "Honourable" in the Challies family.

FREQUENCY CONVERSION—Cont'd.

RIGHT—A MOTOR-GENERATOR set, below, at the National Research plant is replaced by two 37½ kva transformers, above, as the laboratory, located in Scarborough, is converted from 25 to 60 cycle power. The two motors and generator will be removed.

BELOW—TYPICAL scene in an industrial plant where frequency conversion is under way. New motors of all sizes are placed in rows ready to replace 25-cycle motors, in the plant. The job is done step by step throughout the factory.





Eastern Expedition

Toronto Board Of Trade Members Make First Stop At Des Joachims

DURING their annual tour this year, members of the Toronto Board of Trade had a closer look at two vital links in Hydro's half-billion dollar expansion program.

In fact, Des Joachims—the Commission's senior postwar power project—was the first stopping point during the Board's intensive five-day Membership Tour of the Ottawa Valley, Northern Quebec, Quebec City and Montreal.

Headed by their President, E. G. Burton, C.B.E., the visitors arrived by special train on the morning of September 12 at Moor Lake Station, some three miles distant from the big Ottawa River development.

Then, escorted by several Hydro representatives, including Chairman Robert H. Saunders, Richard L. Hearn, General Manager and Chief Engineer; A. W. Manby, Assistant General Manager—Administration; Dr. Otto Holden, Assistant General Manager—Engineering; David Forgan, Director of Construction and J. A. Blay, Manager of Promotion, the party boarded buses for a direct run to the Des Joachims camp cafeteria. Here breakfast was served (and seemingly enjoyed after the all-night trip) to the 75-man entourage.

At the Reception Centre following breakfast, Dr. Holden (armed with pointer) gave a brief but comprehensive description of the outstanding features of Des Joachims project, using a large, topographical map to illustrate and highlight his remarks. Guests were also provided with brochures containing additional information about the Des Joachims "job."

During a tour of the development—with Chief Guide Gowan Guest in the lead—the party made its first stop at the main lookout overlooking the upstream side of the main dam. At this point the visitors got an over-all view of Des Joachims in its semi-final stages. Here, too, they were able to witness the ingenious closure of the sluiceways in the Ontario end of the giant dam structure.

Buses and cars carrying the group then swung down the steep hill to the foot of the main dam where the immensity of the project became even more apparent. Across the main access bridge they travelled on foot to the point where the powerhouse was taking shape, and the penstocks were poking their giant steel snouts down the concrete face of the dam. Some of the party even ventured into the heart of the dam structure before returning to the buses for the trip around to the Quebec side where the concrete mixing plant towers above the valley.

Next stop on the three-hour tour was at McConnell Lake control dam. Here

(Continued on page 30)

MEMBERS OF Board of Trade party on access bridge during visit to powerhouse area.



HONOUR DR. HOLDEN



DR. OTTO HOLDEN

FIRST Canadian engineer to receive the honor, Dr. Otto Holden, Hydro's Assistant General Manager — Engineering, has been appointed a director of District 3 of the American Society of Civil Engineers. This society is the oldest national engineering society in the United States. It was instituted in 1852 for the purpose of advancing engineering and architectural knowledge and practice and maintaining a high professional standard among its members.

Born in Toronto, Dr. Holden received his education at Brock Avenue Public School, Parkdale Collegiate and the University of Toronto. In 1913 he joined the Commission staff as a design engineer, was appointed assistant hydraulic engineer in 1924 and hydraulic engineer in 1937. He was appointed to his present position in 1947. In 1944 he was honoured by his alma mater, the University of Toronto, with the degree of Doctor of Engineering, *honoris causa,* conferred at the convocation on June 8 of that year.

For many years Dr. Holden has been active in the affairs of several engineering and educational organizations and has served as Chairman of the Toronto Branch of the Engineering Institute of Canada, President of the Royal Canadian Institute, President of the Engineering Alumni Association of the University of Toronto and member of the Council of the Engineering Institute of Canada. He has also served on the international committee for the design and construction of remedial works on the Niagara River and was a collaborator on the design of the proposed St. Lawrence River Development.

SCHEDULE CONVERSION AT RICHMOND HILL

Preliminary steps in connection with the changeover from 25 to 60 cycle power are being made in Richmond Hill. Tentative date for the conversion is next May.

TWO-STAGE OPERATION

(Continued from page 12)

ings, the level of the river, above the dam, was gradually raised. After several lifts had been poured, the water began to flow through the McConnell dam diversion sluices.

McConnell Lake Dam

Here, the McConnell Lake control dam stretches across the wide valley through which the Ottawa flowed in prehistoric times before a glacial deposit of rock and gravel blocked its path. This dam is designed to control the water level in the vast forebay, stretching 57 miles above Des Joachims. Part of its control function will involve spilling excess water during flood periods.

The 1,600-foot structure contains nine diversion sluiceways which were incorporated to pass the water downstream after the flow of the river was shut off at the main dam. At the present time the whole flow of the river is passing through these openings, since closure of the last opening in the main dam was made on September 15.

Within the next few weeks, closure of the control dam is scheduled to begin as the second phase of the two-stage operation. With this in prospect, workmen, during the past few weeks, have been dismantling the closure equipment at the main dam and moving it to the McConnell Lake site for reassembly.

During the next few months, as the closure operation is repeated here, the level of the water in the great headpond, which is a distinguishing feature of the Des Joachims development, will continue to rise. This filling process would be accomplished more rapidly if it were possible to shut off the flow completely. Hydro, however, must be content with holding back only the surplus water, allowing the main flow of the river to continue without interruption. It is anticipated that plenty of surplus water, from melting snow and ice, will be available next spring to sufficiently fill the huge reservoir in time to put several of the Des Joachims generators in production by the early part of the summer.

Advantages Of Two-Stage Closure

Engineers point out that original plans for Des Joachims called for only one closure operation at the main dam while the control dam was built entirely in the dry.

If closure operation had been carried out at the main dam alone, it would not have been possible to dewater the tailrace area below this structure until the level of the water in the forebay had been raised high enough to pass the entire river flow through the discharge facilities of the control dam.

With the two-stage closure method, it has been possible to undertake the tailrace excavation this fall while the final closure is taking place at the McConnell Lake dam. Thus, several months have been pared from the total time originally believed necessary to complete the development and place it in operation.

Excavation of the tailrace, which is 175 feet wide and over a mile in length, is now under way. This work will involve the removal of approximately 1,500,000 cubic yards of rock. It is estimated that it will require from eight to ten months to complete this phase of the work.

By the adoption of the two-stage closure technique, it will enable the Commission, at an earlier date, to tap a new source of wealth for all its shareholders—the people of Ontario!

ONTARIO LEADS RADIO SALES

Ontario led the rest of Canada in radio sales early this year when sales were boosted by more than $1,000,000. Car radios were most popular and next came standard broadcast table models. The Bureau of Statistics reported that in the first five months this year 240,900 radios were sold in Canada compared with 180,200 for the same period in 1948.

LINE CAMP AT MASSEY

Opening of a new Hydro construction camp two miles north of Massey, Ontario, has resulted in much additional business for firms in the town. A large crew of men are engaged in building the new 125-mile line to carry power from Hydro's Tunnel Development to the new frequency changer station near Sudbury.

NEW TRANSFORMERS

Two new transformers, on order for more than a year, were delivered to Strathroy Public Utilities Commission recently, it is reported. Costing approximately $6,000 each, the two transformers and a third, which is still to come, are of a type that can be used for either 25- or 60-cycle power. Although the transformers will be installed as soon as possible, they will not be used until after the frequency change-over unless trouble develops with the present equipment, which has been in service for a number of years.

1. THIS VIEW shows one of the nine diversion openings before closure operations were actually undertaken.

★

2. CLOSURE OPERATION shown underway with three shutters and frame in position. Last shutter will cut off flow of river through this opening.

★

3. UPSTREAM VIEW of main dam with handling equipment overhead and three closure gates in position to allow pouring of concrete "lifts."

★

4. BETWEEN JULY 8, date of first closure, and September 15, when this final closure was made, total of 44,500 cu. yds. of concrete were poured.






3


4

"C" DAY

(Continued from page 6)

already been issued by the Hydro Commission for the general guidance of the municipal commissions. Broadly speaking, he said, memoranda One to Four were designed to give the same type of accounting treatment to the municipalities' assets and reserves as the Commission would be applying to its supply facilities. Memorandum Five, it was pointed out, dealt with the municipal problem of financing.

The procedures, Mr. Banks stated, had three main objectives: To carry the plant accounts at correct values at all times; extinguish any depreciation reserve released through conversion; and avoid charging current maintenance against conversion expense and vice versa.

When the municipality wished to carry out work itself, he continued, it should prepare an estimate of the job segregated as to conversion cost, betterments and extensions, and send it through the appropriate regional office to the Consumer Service Division at the Commission's Head Office.

Expenditures "In Suspense"

Explaining further, the speaker said, a new account was to be used by the municipalities for the recording of costs against the above estimate. This account would be known as "frequency expenditures in suspense." When a job was completed, he said, the expenditure was to be distributed according to the "allocation basis."

At the end of the fiscal year, he reiterated, when preparing a statement of assets and liabilities the cumulative "frequency expenditure in suspense" was to be shown as an asset so described. On completion of the work, the speaker said, the final entries would be made and the item of net conversion expense would be charged in part against operating surplus. The portion of the expense applicable to any other utility would be set up as a charge to be absorbed in the annual cost adjustment over a period not exceeding five years.

In memorandum Four dealing with meters, Mr. Banks pointed out that the Commission was establishing a meter conversion shop which would be subject to cost controls. The cost of operating this shop would be shared by all municipalities participating in the pooled arrangement based upon the number and type of meters which were converted for it. This sharing of cost would be effected by means of establishing estimated unit costs per meter which would be used for interim billings. At the end of the entire conversion program, it was pointed out, an accurate distribution of cost would be made and a final bill or credit would be issued to each municipality, something along the lines of the present Thirteenth Power Bill.

Memorandum Number Five covered financing of conversion cost, and the speaker pointed out, that two amendments were made to the Power Commission Act to enable the municipalities to use surplus funds for the actual financing of the cost and surplus account for the actual expenses charged. It was also pointed out that where the local commission had not sufficient surplus in the form of cash or securities it would be necessary to float debentures.

Reports In Chart Form

"Planning of frequency conversion begins in the System Planning Department of the Commission," declared H. J. Edwards, an H.E.P.C. Area Planning Engineer, at the outset of his address. Schedules of tentative dates of conversion, he said, were prepared by the planning section and reports in chart form would be issued to all departments and municipalities.

Schedules for the conversion of municipalities and rural operating areas supplied from the 110 kv. high tension stations would be prepared by the Area Planning Engineers, the speaker stated. Preliminary studies indicated that the maximum average rate of conversion in a large municipality would be approximately 300 kilowatts of load or about 300 domestic and commercial consumers per day. It was hoped that four cuts per week



could be made, one working day per week being reserved for any clean-up or preparatory work. Because of possible difficulty in accommodating large crews in towns and villages, the rate of change-over had been reduced in smaller municipalities.

The Commission had decided, Mr. Edwards said, to have the consumers' equipment changed by a contractor and it was essential that complete data be furnished to the contractor so that the services could be located and identified. Automatic tabulating had been installed for recording consumer information. Inventory of equipment, he said, had to be completed in time to secure the necessary material for conversion, and surveys had to precede inventories.

Mr. Edwards told the meeting that domestic and commercial consumers would be inventoried not less than three months before conversion, but inventory of power consumers would have to be done at least a year before change-over date in order that special items of equipment might be procured. Preliminary surveys in the case of the latter, therefore, was being started about fifteen months ahead of conversion.

The speaker pointed out that the preliminary survey entailed the making of maps of the local system, complete with details of substation locations, primary lines, switches and point of easy severance of lines such as junctions and dead-end clevices. All transformers would be shown and given a number which would be marked on the pole. Local system numbers would be used if possible. The maps would also indicate the class of service supplied by the transformer. Power consumers would be located on the first survey map and power bus shown with voltage. Lighting secondaries and bus breaks would be added to this map on the second survey.

Inventory Control Sheets

The local office, he stated, would be asked to supply a list of power consumers and their correct addresses, folio numbers, meter numbers and transformer locations supplying them. The power consumers would be tabulated in the Toronto office and a set of inventory control sheets prepared for the contractor.

Mr. Edwards described in detail how the second survey would be conducted and pointed out that planning was essentially a matter of collecting complete details regarding the system and the consumer and passing that data on to the various crews, (line, station, utility and contractors) in detailed manner so that instructions for "C" day could be easily followed.

In conclusion, Mr. Edwards said that the "headaches" promised to be severe and prolonged but the Commission looked forward to the conversion job as something new and interesting, and thought that the members of the staff would be proud to have had a part in the work.

Over 130 delegates attended the conference. During the morning, time was allowed for the delegates to look over the exhibits of office equipment which included an electric typewriter, public utilities billing machine, an adding machine and routine office supplies.

Rev. H. M. Paulin, B.A., D.D., the luncheon speaker, gave several readings from the works of Henry Drummond, including "The Habitant and Little Baptiste."

NEW SUBSTATION AT KINGSTON

• Construction of a new substation in Kingston will increase the ultimate capacity of the Kingston system by 6,000 kilowatts, Public Utilities Commission Chairman A. E. Stansbury announced recently. Scheduled to begin operation in a year, the new substation will cost approximately $70,000 and will help relieve the increasing electrical loads in the city which have risen at a surprising rate.



TIRE WERE quite a number of lady delegates at the A.E.U. Conference, office and Administration Section, at Windsor on September 23. Mrs. B. Christie, Brantford Township, and Phyllis Mitchell, Strathroy, look over an exhibit of office supplies.



UPPER RIGHT—J. F. Cook, Windsor and H. F. Parker, Woodstock thrash out a knotty problem.



ABOVE—SID. ARBOUR, Tecumseh, Samuel Murchie, Brantford Township, and George Boucher, Paris, were involved in an interesting discussion when this shot was taken.

LOWER RIGHT—During the morning, time was allowed for the delegates to look over the exhibits of office equipment. Those identified in this group are D. N. Durward, Galt, R. H. Becker, Kitchener and F. J. Ware, Toronto, who were photographed while looking at a public utilities billing machine.



WONDER IF it's the same old line! J. E. Teckoe, Jr., Galt, fool up the numbers, while E. L. Gothard, Brantford, and Ray Pfaff, St. Catharines, make the calls.



AROUND THE HYDRO CIRCUIT

Announce Plans For New Station At Ingersoll

With approval of the necessary expenditures by the town council, the Ingersoll Public Utilities Commission is said to be now prepared for Ontario Hydro to go ahead with the construction of a new substation designed to meet increasing power demands in the district. The new station will be equipped with a dual frequency transformer, which will receive power from the Hydro circuits at 26,400 volts and step it down to 4,000/2,300 volt star system for local distribution. The transformer unit will have a capacity of 2,000 kv.-a. for 25-cycle power, which will be increased to 3,600 kv.-a. when the changeover is made to 60 cycles. The high-voltage equipment will be set up outdoors, while low-voltage equipment will be accommodated in a brick building.

When the new station has been completed, the Ingersoll Public Utilities Commission intends to change the existing 2,300 volt undergrounded system to a 4,000/2,300 volt star distribution system. The station will have 3 low voltage feeders and the Public Utilities Commission will undertake the construction of lines necessary to "tie in" the new station with the existing distribution systems.

The new station should greatly relieve existing transformer facilities which are reported to be already heavily taxed. It will also assist in providing more power for the local industrial expansion which is anticipated with the completion of the Ingersoll channel improvement being carried out by the Upper Thames Valley Authority.

Classified Ads

FOR SALE

CANADIAN GENERAL ELECTRIC, 500 kva. (40° C rise), single phase, type H outdoor transformer, 25 cycle, 26,400/13,200--2300/4600/8000 Y volts, with High voltage taps 25740, 25080, 24420, 23760, 12540 and 11880, serial No. 187535. Impedence of this transformer at 75° C is 4.95 per cent. This transformer has never been in service having been kept as a spare and has been full of oil since its purchase. Direct inquiries to A. E. Ditchburn, Manager of Strathmore Public Utilities Commission.

HYDRO EXPANSION IN SAULT

Hydro plans for rural consumers and mining developments in the Sault Ste. Marie area include construction of a line from Hydro's new Tunnel Development on the Mississagi River to tie in that district with the Northeastern Region.

When the LaCave development is finished in 1952, it also will be linked with the lines in this Region so that power from this source will be available to the Sault Ste. Marie area. Included in the plans also is the possibility of building a generating plant at Aubrey Falls, above Tunnel Development.

In addition, the Commission has authorized preliminary studies of sites near White River, with a possible power potential of 37,500 kilowatts (50,000 hp.). If this project materializes, it would act as a link between the Aguasabon Development and the lines at the Soo.

"OUTSTANDING" CO-OPERATION

Voluntary curtailment of power consumption by local consumers during last fall's power shortage was praised in a recent report issued by the Toronto Hydro-Electric System. The Toronto System, largest municipal power supplier in Ontario, said that the consumers' co-operation had been "outstanding" when they were asked to cut power consumption during the temparary emergency.

NEW 60-CYCLE STATION PLANNED FOR TORONTO

Land acquired by the city of Toronto in 1883 in connection with the "Don Improvement" is being purchased by Ontario Hydro, the Commission announced recently. The Commission will use the site for the location of a 60-cycle 26 kv to 13 kv transformer station to be known as Toronto-Gerrard T.S. which will supply power to the Toronto Hydro-Electric System.

It will also form a tie between the Scarboro (Steam) G.S. and the Commission's 60-cycle Scarboro Frequency-Changer and Transformer Station.

MANITOULIN CABLE

A 19-mile, 44,000-volt transmission line from Lawson Quarry to Goat Island with a step-down station there and a 12,000-volt submarine cable under the North Channel of Lake Huron at Little Current is planned to bring additional power to Hydro consumers on Manitoulin Island. H. D. Rothwell, Administrative Assistant —Regions, recently told island consumers that the additional power would be available by the end of September. Since the Manitoulin demand for Hydro had doubled during the past five years, Mr. Rothwell said the Commission has concerned itself especially with the Island's problems.



—Cartoon is by Jack Boothe, The Toronto Globe and Mail

This and That

WE HAD the pleasant experience of renewing acquaintance with Hydro's "Three Musketeers" while attending the District No. 3 O.M.E.A. Convention at Port Arthur.

During our return trip we started to think about this interesting trio and wondered just how many Hydro folk know them as "The Three Musketeers." We decided that it was our duty to officially introduce them in order that they may be accorded all honour and courtesies which men of noble lineage—and especially "Musketeers"—should be accorded.

And so, let us proceed with this highly privileged mission of introduction. Let the silver trumpets sound in rousing fanfare, and let a paean of acclaim rise from the serried ranks of Hydro courtiers as we preesnt D'Artagnan Albert Jennings of the House of East York; Athos Jack Pattison and Aramis C. H. Moors of the House of Fort William.

While we admit that any resemblance they might bear to the original "Three Musketeers" created by Alexandre Dumas might be regarded as something of a coincidence, we stoutly defend our conviction that they lack nothing of the daring and adventuresome spirit of their early predecessors.

(Just off the record, we would really like to see them arrive at a convention in the 17th century attire of the original Musketeers. We can almost hear the rattle of their swords as they approach the registration desk!)

Although D'Artagnan Jennings, Athos Pattison and Aramis Moors have not been seen rattling rapiers, they do some fast-moving verbal fencing with one another —especially D'Artagnan and Athos. For example, Athos in welcoming the delegates took time out to commiserate feelingly with the assemblage that they should be called upon to endure the undeserved misfortune of having D'Artagnan Jennings in their midst: He even went so far as to observe that they could see for themselves why it would be the part of wisdom to reject any invitation to visit the House of East York. When his turn came to speak, D'Artagnan Jennings seemingly ignored the innuendos thrown in his direction and opened his remarks with a few observations to the effect that his presence was an indication of the unselfish spirit of the House of East York and of the desire of that House that the greatest possible dignity attend the proceedings of District No. 3. His heart was distressed, D'Artagnan said, that the good people of the Northwest should be exposed to the wily artifices of one Athos Jack Pattison.

When the delegates were en route to Pine Portage for an inspection of the new development now under construction on the Nipigon River, Athos, being a former railroad man of many years' standing, of course, occupied the co-pilot's seat —or rather the co-driver's seat for they travelled by bus. At the first stop, D'Artagnan Jennings, in some manner, managed to slip into Athos' seat—much to the latter's consternation who tilted his



tweed cap in chagrin, and in the process made himself appear like a typical "Lad from Lancashire." Eventually, by a clever subterfuge, Athos managed to regain his standing—or his sitting—in the eyes of the party and remained impervious to the glares of D'Artagnan.

Just in case anyone should be misled by the harmless and good-natured repartee which marks meetings between D'Artagnan Jennings, Athos Jack Pattison and Aramis C. H. Moors, we would like to record an incident which left a deep and memorable impression on our mind. It happened at the close of the convention's business proceedings—during the last few minutes of informalities. It was an incident which bore the most eloquent kind of testimony to the warm and sincere affection in which Albert Jennings is held by a legion of colleagues and friends in the Hydro family. To digress, for a moment, it should be mentioned that Albert who is known as "The Father of Hydro in East York," has served on the East York Commission since its inception in 1926. Incidentally, Albert will observe his 73rd birthday on November 13.

To come back to the convention incident, however, all the delegates present at that last session joined in a simple but stirring tribute to Albert. They blended their voices in "When The Roll Is Called Up Yonder, You'll Be There." Many eyes were just a little moist—and none sang with more feeling than Athos Jack Pattison and Aramis C. H. Moors.

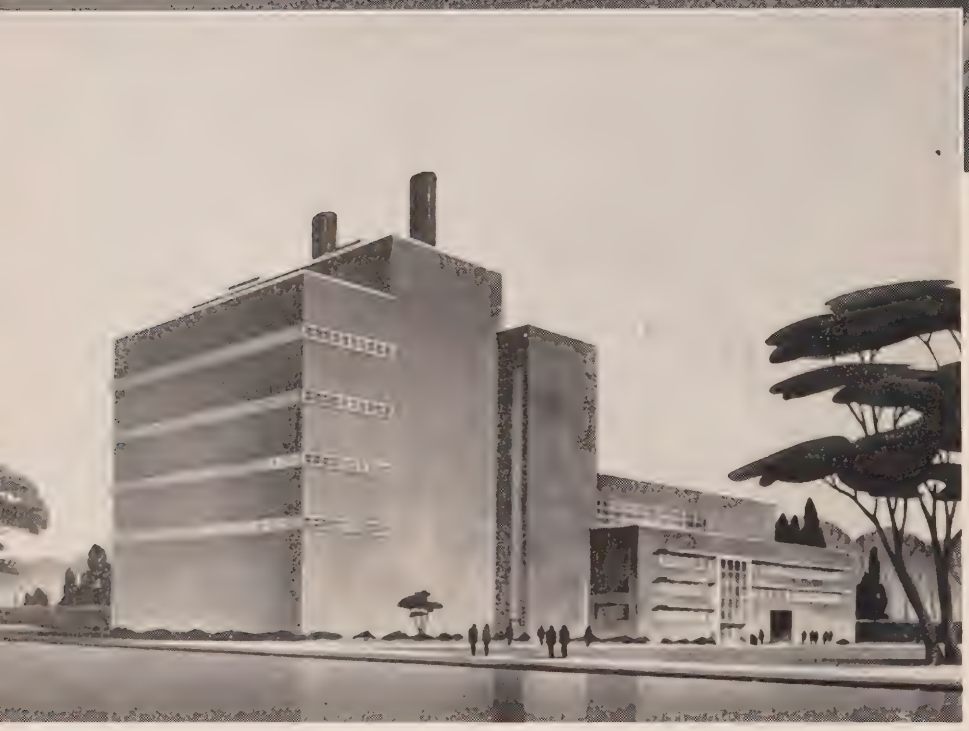
OUR WARM congratulations go to our friend, Ewart Haacke, Editor of Electrical News and Engineering, upon his appointment as Secretary of the Electric Club of Toronto. If Ewart brings to the job that vigor, vision and enterprise which have marked his career to date in the field of technical journalism, the Electric Club will have a very worthy successor to the late and beloved W. D. Corcoran who occupied the position for 15 years. Ewart also continues as Chairman of the Publicity Committee. In that latter capacity, he has issued the following announcement which will be of interest to many Hydro people who are members of the Electric Club:

"The first luncheon meeting this Fall of The Electric Club of Toronto was held on October 5, and meetings will continue every Wednesday until December 21, the executive of the Club decided at a recent meeting called by President W. I. Turner. December 21 will be the Christmas meeting and, as is the custom, there will be special entertainment provided on that date.

"The second half of the Toronto Electric Club's season will begin on January 11, with meetings every Wednesday until March 22. The luncheon meeting on the latter date, will include the annual business meeting. This season, the business meeting will not be combined with the Annual Banquet which will be held Friday evening, March 31. It will be a gala affair as usual.

"F. H. Chandler, Ontario H.E.P.C., has been asked to continue as the Club's past-president, due to the unfortunate demise of the immediate past-president, W. E. Ross."





ABOVE —THE Project will be an impressive addition to the waterfront area as this architect's drawing clearly demonstrates.

★ ★ ★

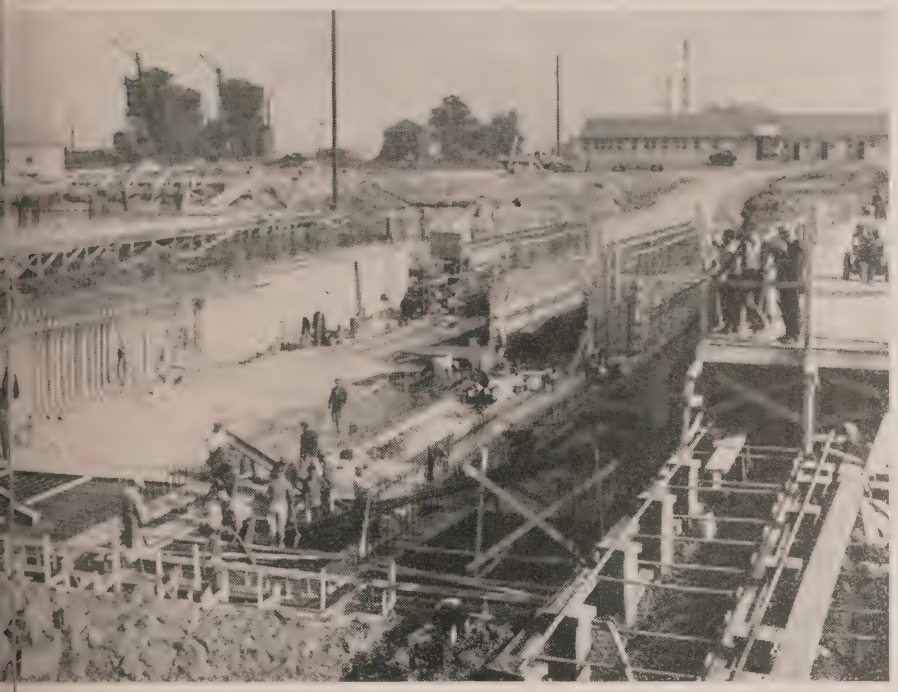
UPPER RIGHT—Pouring of concrete for the main building's massive substructure is expected to be completed by the early fall. The foundation is composed of concrete slabs reinforced by thick steel bars.

A BARREN stretch of marshland along the Detroit River on the southern outskirts of Windsor has been the scene of much activity for the past several months as construction forges ahead on Hydro's $25,000,000 Windsor Steam Generating Station.

The project, scheduled for completion in the fall of 1951, will add 120,000 kilowatts (161,000 hp) of electrical energy to the resources of the Southern Ontario System. Consulting engineers for the job are H. G. Acres and Company of Niagara Falls, while Dinsmore-McIntire Limited of Windsor are the general contractors.

Upon the occasion of our visit, in mid-September, work was progressing at full speed with the pouring of the concrete foundations. These consist of huge concrete slabs, each about five and a half feet thick, resting on steel piles driven nearly 80 feet down through the soft earth to the solid bedrock. For additional reinforcement all parts of the substructure will be interlaced with heavy steel bars. It is estimated that approximately 30,000 cubic yards of concrete wil

—THE Windsor Steam Station occupies an area of approximately 45 acres on the Detroit about ten miles from the heart of downtown Windsor. A good over-all conception of the project is afforded in this aerial view.





Steaming Ahead

Pouring Of Concrete For Foundation Of $25,000,000 Windsor Steam Station Nearing Completion—Construction Program On Schedule

by
John A. Murphy
Hydro News

go into the structure, including the 13,000 cubic yards that will be required for the substructure.

Many Contrasts

FOR one who has witnessed the construction of some of the Commission's great hydro-electric projects, the building of a steam generating station presents many contrasts. One of the most noticeable is in the pouring of the concrete. On the former type of job the concrete is carried from the mixing plant on the great Bailey Bridge conveyor trestle and then poured through the big steel chutes into the formwork of the dam. In the building of the steam station at Windsor, it is a much more personalized operation. The concrete is mixed at the supplier's plant and carried by truck to the project site. There, workmen trudge in a continuous procession, filling their rubber-tired wheelbarrows at the concrete trucks, wheeling them down the wooden ramps to the excavation and pouring their cargo into the formwork—then back up for another load.

Another contrast between a steam station and a hydraulic project is the difference in size. Hydro-electric developments generally are spread over large areas, encompassing sometimes hundreds of square miles. At Windsor, the steam plant is taking shape in an area of approximately 90 acres.

"On The Button"

It is expected that the concrete pouring operations will be completed by the end of October, as the construction schedule to the present time is "on the button," to quote H. W. Southin, Project Manager for H. G. Acres and Company. The 230 men on the job are going at top speed to complete as much of the work as possible before the advent of cold weather.

The necessity for the massive foundations being built for the main building is readily apparent when one considers the great tonnage of the equipment it will house. Two 60,000 kilowatts (80,000 hp) steam turbine generators are on order from the English Electric Company of Stafford, England. These huge units will be supplied with steam by two 650,000-pound per-hour steam generators now being built by the Babcock-Wilcox and Goldie-McCulloch Company of Galt, Ontario. Other equipment which has been ordered includes two steam condensers for the turbine generators to be supplied by Peacock Brothers of Toronto and Montreal and fabricated by Canadian Vickers Limited of Montreal. One turbine generator plus one steam generator and one condenser, which comprise a complete unit, weigh altogether approximately 1,000 tons.

Large Permanent Wharf

Another interesting feature of the project is the construction of the dock at the river's edge. Here, in a spot long favoured by Windsor youngsters as a swimming haunt, piles are being driven deep into the river bed to form the bases of a large permanent wharf for the colliers that will keep the station supplied with fuel as well as the lake steamers bringing in other materials and supplies. To the chuffing chug of a pile driver, the 60-foot wooden piles are driven through the soft mud in the river floor until they are firmly secured in the hard-packed sand above the bedrock.

In order to provide the cooling water necessary for the operation of the condensers, a water tunnel, 11 feet in diameter will be built. Water will be drawn from the Detroit River, pass through the plant and be discharged back into the river at a location far enough removed from the intake that the temperature of the incoming water will not be affected. The building of this tunnel will require the excavation of nearly 30,000 cubic yards of earth.

Delivery of building materials for the project is being facilitated by means of a special railway siding one and a half miles long, branching in from the main line of the Essex Terminal Railway. When the station has been completed, spurs,



branching from the main siding, will run along two sides of the building.

To meet the water requirements of the new station for plumbing and other such uses, the Windsor Utilities Commission has authorized the construction of a four-inch water main into the site of the plant.

250-Foot Stacks

When completed, the smoke stacks will tower 250 feet above the ground, and the building will be the dominant structure along the Canadian side of the river in the Sandwich area. However, it will not be completely alone, for almost directly across the river is one of the great stations of the Detroit Edison Company while another plant of that company is located a few miles farther upstream on the American side.

When the Hydro-Electric developments now under construction are brought into service, the Windsor station will serve as invaluable insurance against a power emergency caused by reduced water in storage areas. In addition, because of its location in the centre of a heavy load area, it will be readily available to fill the breach should a transmission failure occur on any long-distance transmission lines feeding the district and thus minimize any interruption of service to the consumer.

TOP—THE CONSTRUCTION of the main building at the Windsor Steam Station will require the excavation of approximately 30,000 cubic yards of earth. An additional 30,000 cubic yards will be dug out for the intake tunnel that will supply condensers with water.

★

CENTRE — A LARGE permanent dock is being constructed adjacent to the main building to accommodate the ships carrying coal and other supplies to the project. Wooden piles, 60 feet long are being driven into the river bed to form a solid base for the pier.

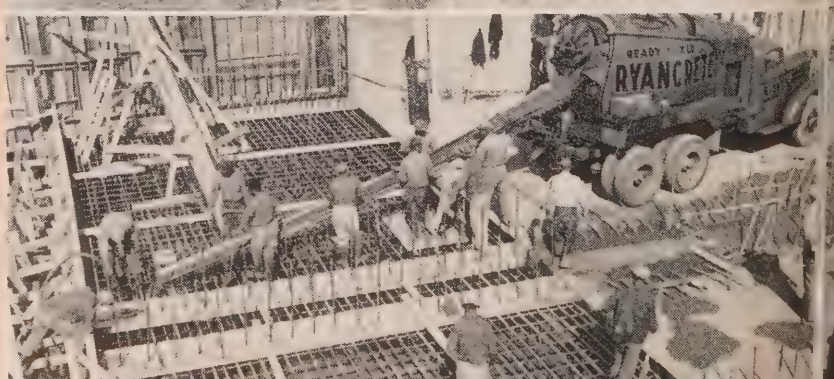
★

BOTTOM—THE FOUNDATION of the Windsor Steam Station comprises massive slabs of concrete, five and a half feet thick, interlaced with heavy steel bars. Here we see concrete pouring in progress for the substructure of main building.









HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



THIS month we are concerned with interior decoration. One of the best definitions for interior decorating is the selection and arrangement of furnishings guided by good taste. Taste, no matter how simple or varied, how economical or astronomical, is discrimination. It is like separating orchids from onions, when your best efforts have been realized.

The size of furnishings for the space they are to occupy is the art of "scale." Large pieces of furniture do not look attractive in a small room, just as a petite lady in a huge hat looks overwhelmed. Two chairs of the same outsize dimensions will appear different in scale if the arms and legs of one are fat, and the other thin. Slip covers solve such a problem.

There are two kinds of balance, formal and informal. A combination of both in a room adds more interest. There is quiet dignity in the placement of identical objects on each side of centre, for example, (1) a pair of chairs on either side of the fireplace; (2) twin tables with matching lamps flanking a chesterfield; (3) identical objects placed equidistant on a mantel. However, an air of lightheartedness and beauty may be obtained by placing unlike objects or weights in the right places. A loveseat at right angles to the fireplace, facing two pull-up chairs separated by a lamp table, can give the right feeling, or by a wing chair in front of a picture window offset by a lighter-scaled chair, lamp table and lamp.

Can there be more than one focal point? We say, yes. The fireplace is a natural, or you may feature a picture window, a magnificent picture, or a breakfront. You may have a quiet reading centre at the fireplace end of the living room, and a music centre at the other end.

Authorities remind you that furniture should never be placed cater-corner. Everything must be parallel or at right angles to the wall. A room should never be overcrowded with pictures and furniture—and no chair should be isolated from any group.

Instead of shoving around furniture, it is easier to arrange the pieces on paper first. Large department stores have an advisory service where you are given graph paper and cut-out blocks of average-size furniture. On the floor plan (marked to the size of your room) you may plot your course to move furniture to the best advantage.

In one instance, we thought a large mirror facing a big window would be interesting. However, we are advised that mirrors should never be placed in the direct rays of the sun.

There are three different types of mirrors, known as plate glass mirror, crystal mirror and shock mirror. Plate glass mirrors are available in thicknesses from ⅛" to 1½", and the highest quality is termed British Plate Glass. The only difference between crystal and shock glass is in the weight. When these mirrors are silvered or cut the result may be waviness or distorted vision.

The unwary buyer of woods may assume that a label with "mah" or "wal" is genuine mahogany or walnut, whereas it refers to only the colour of the finish. Many pieces of furniture are now made of both soft and hardwood.

Plywood—Is it durable? Yes, it is made by gluing together under heavy pressure, three or more strips of wood laid crosswise so that the grain of alternate layers runs in opposite directions. Five and three ply are the most common.

Veneer is wood cut very thin. It is usually cut from trees with irregular grain and only one-twenty-eighth inch thick. Veneers are used for the face and back layers of plywood in order to produce beautifully matched and decorative surfaces. Edges and corners of veneered surfaces must be well-finished.

There is a marked difference between inlay and marquetry, but it is sometimes imitated with paints and transfers. Inlays are specially designed pieces of wood, metal or ivory, which are fitted into grooves cut in a piece of wood; whereas marquetry is the entire surface laid with a pattern of cut-up pieces fitted closely together.

Furniture cannot be judged by its "face" value. Look behind, inside and under each piece to see of what materials and how it is made. Examine chairs and tables carefully, pull out drawers, open doors, drop leaves and inspect all parts to see how the furniture is put together.

Upholstery fabric is too often selected for colour scheme and design. Today, the price and workmanship of slip covers, etc., should remind the buyer to select fabric resistant to wear, soil and fading.

A charming, livable grouping of both eighteenth century and traditional furnishings, can be carried out with modern colour and arrangement.

FURNITURE POLISH

1 c or ½ pt. boiled linseed oil
(This preserves the wood)
1 c or ½ pt. turpentine
(This polishes)
½ c or ¼ pt. vinegar
(This removes stains)
¼ c methylated spirits
(This dries and gives a gloss)

Mix vinegar and oil gradually to a thick cream; add turpentine and spirits. Bottle and shake well before using.

CLEANING FURNITURE

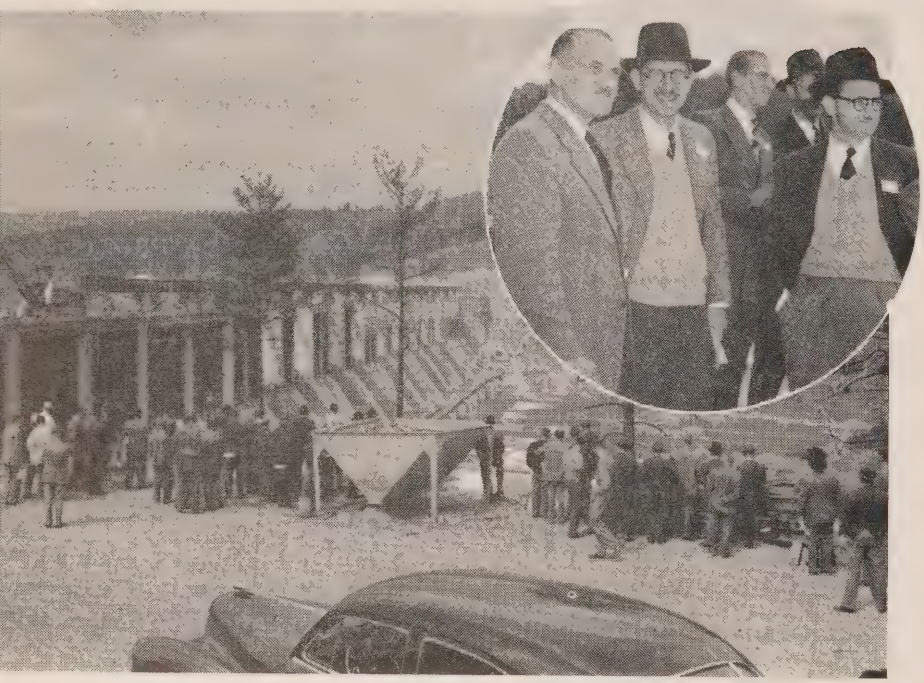
Upholstered furniture: Clean with vacuum cleaner attachments then brush well with damp whisk.

Leather cushions: Wash with a cloth wrung out of tepid water. Dry at once with cheesecloth.

Woodwork: If sticky, wash with tepid water and mild soap. Rinse with damp cloth. Dry. Apply a small amount of polish on a flannelette cloth and rub with a rotary motion. Polish with dry cloth until "film" disappears.

Linoleum: Prevent water from getting into the seams or under linoleum. Always wipe dry after cleaning.

Painted walls: Use paint cleaner according to directions having measured the water and cleaner.



McCONNELL LAKE control dam was included in the Board of Trade tour. While the party was visiting this point, A. W. Manby, Assistant General Manager—Administration, H.E.P.C., Walter J. Gordon, and A. J. Little, Board of Trade (inset), were observed exchanging comments.

★ ★ ★ ★

THIS GROUP, shown below, including J. A. Blay, Manager of Promotion, H.E.P.C.; J. E. McCully, W. P. Scott, Chairman Robert H. Saunders and Robert Fennell, K.C., pause for a chat outside the concrete mixing plant at the main dam.



(Continued from page 19)

the visitors saw the Ottawa flowin through the sluiceways down the cour it followed in prehistoric times. A sho stop was made en route back to the can at the point where workmen were e gaged in constructing a cofferdam as necessary preliminary to the comple dewatering of the tailrace section. Th area will be deepened by the blasting an removal of some 1,500,000 cubic yards bedrock.

The curtain was rung down on th phase of the tour by a short ride aroun the colony section where homes for th permanent operating staff were seen un der construction.

Following a short reception, the gues were conducted back to the cafeteria fo lunch. After a brief rest, the party wa off again for a visit to Deep River town site where British and Canadian scientis —engaged in atomic research at nearb Chalk River—make their homes. The the visitors proceeded to Hydro's Chenau development, 60 miles downstream fro Des Joachims, where they had a furthe opportunity of seeing, at first hand, an other great source of power in th making.

Over 12 hours after they had alighte from the train at Moor Lake Station the party, following dinner at Chenaux boarded buses for a short trip to Renfrew where their train was waiting to con tinue the journey. In bidding farewell t their Hydro hosts, members of the part —many of them prominent industrialist and captains of commerce—expresse their praise of the Commission and th magnitude of its postwar program ded cated to the progress and continued pro perity of Ontario.

REGISTERING UNQUALIFIED approval of the tour, this group, belov includes both guests and hosts. From left to right, Dr. Otto Holde Assistant General Manager—Engineering, Chairman Robert H. Saunder Walter J. Gordon and Edgar G. Burton, C.B.E., Immediate Past Pres dent and President of the Toronto Board of Trade respectively; Richa L. Hearn, General Manager and Chief Engineer, H.E.P.C., and A. W Manby, Assistant General Manager—Administration.







LEFT—TOUR of the Des Joachims development for the Toronto Board of Trade included a visit to the big concrete-mixing plant. Inset—Robert Fennell, K.C., E. G. Burton, C.B.E. and Chairman Robert H. Saunders chat in the shadow of the main dam. Above—Richard L. Hearn, General Manager and Chief Engineer explains one of the many interesting features visible in the powerhouse area.

BELOW—THIS group, including W. L. Fraser, Resident Engineer, H. J. Smith, George A. Burt, North Bay and William Cork, seem to manifest satisfaction with progress at Hydro's Chenaux project, 60 miles down the Ottawa River from Des Joachims.

BELOW—McCONNELL Lake control dam, where this picture was taken, spans the wide valley through which the Ottawa flowed in prehistoric times. The group, left to right, includes Stanley A. Grant, J. A. Scythes, Dr. Otto Holden and J. A. Bell.

LOWER LEFT—Members of the party viewed the Chenaux development from the top of the main dam where construction is well-advanced.







ARMY BRIDGES GAP

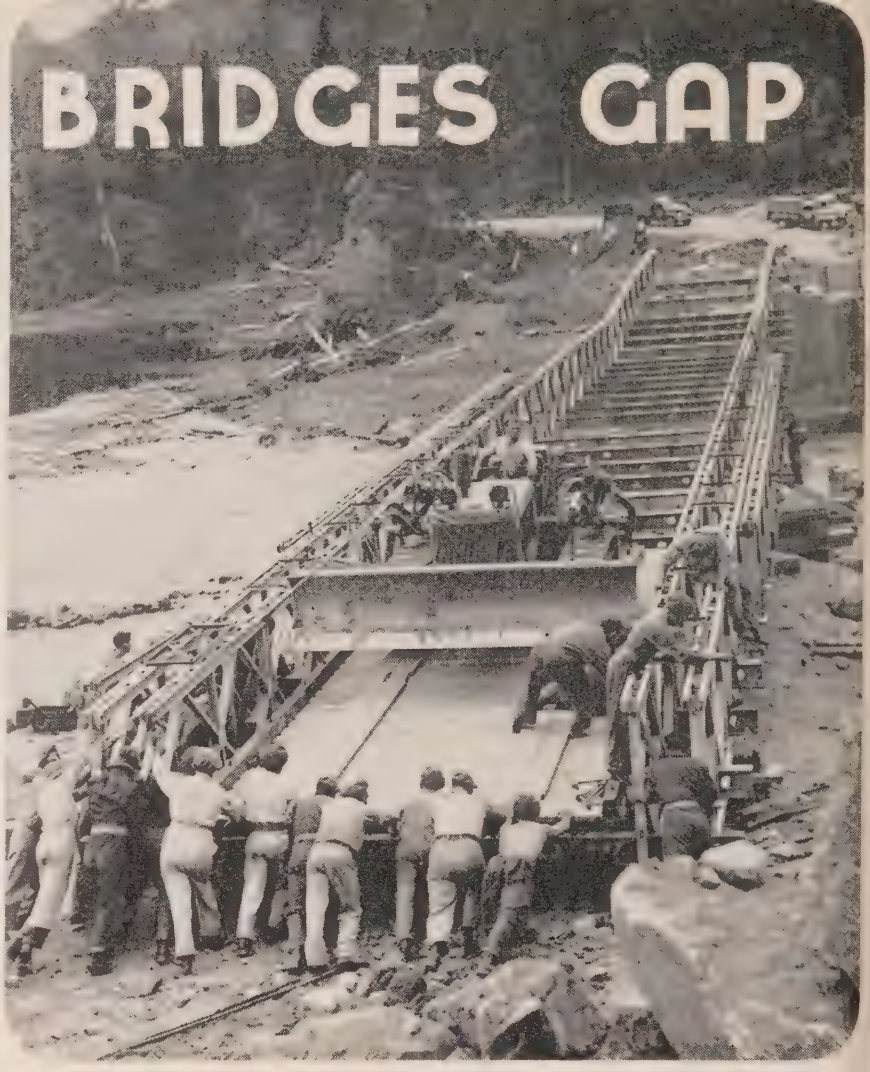
THE Army successfully bridged a gap recently.

Under the supervision of Hydro engineers, and using Hydro materials, two Canadian army reserve units, one from North Bay and one from Ottawa, launched a Bailey Bridge across the Petawawa River, 10 miles (as the crow flies) south of Des Joachims.

The opportunity for the operation was offered to the Army by Hydro as part of a weekend training scheme.

Stretching 190 feet across the river, the bridge forms a permanent part of a road which will provide access to the 230-kv transmission lines being built between Des Joachims and Burlington. Erected in two days, it is one of five bridges spanning rivers and lakes along the route.

Launched in 10-foot sections, the bridge was rolled out onto crib piers previously erected by Hydro crews. As working space was restricted to 60 feet by the steep cliffs on the north side of the river, it was necessary to use a 13-ton tractor as a counterweight, in place of the usual 80 feet of bridge. Further difficulty was caused by the necessity of piling materials some distance away, so that they had to be carried to the launching point.



BRIDGING OPERATION, which took two days to complete, was carried on by Army units under the supervision of Hydro. Here, spanning of river is nearly complete.

INITIAL STAGE of bridge construction across the Petawawa river, showing crib piers, temporary bridge, and sections of Bailey, is pictured in photograph below.



NEWS IN BRIEF

ELECTRONIC COOKING

Electronic cooking is being used commercially according to a report in the Federal Power Commission's News Digest. An electronic range is being developed by some manufacturers, but it will be some time before the homemaker will be using the electronic, or high-frequency method. In cooking electronically, cooks can discard pot holders, because the oven and cooking utensils remain cool. Frozen vegetables are cooked in their packages. Speed is the great advantage, the report concludes, as cooking times are cut down by about two-thirds.

★

ONTARIO SALES TRIPLED

Continuing the gains recorded earlier this year, the number of radio receiving sets sold by producers showed a sharp rise in June, the Dominion Bureau of Statistics reports. Sales in the month amounted to 63,400 units as compared with 26,600 units sold in the same month last year. In June 1949, 39,877 units were sold in Ontario as compared with 13,127 units sold in June 1948.

★

ENERGY DISTRIBUTION UP

Electrical energy distributed by the United States electric light and power industry in the week ending September 10 amounted to 5,258,090,000 kilowatt-hours, an increase of 1.8 percent over the comparative week in 1948, according to the Edison Electric Institute.

★

BRIGHT FUTURE

Strong long-term growth was forecast for the electrical appliance industry in a recent monthly bulletin issued by a U.S. financial organization. The bulletin pointed out that, while this industry might have a lower sales pattern than during previous years, the development of new and improved appliances should continue as one of the major factors creating a general increase in demand.

★

MATTAWA POWER SHORTAGE

Mattawa recently experienced one of the most serious power shortages in its history, according to a C.P. report. The abnormally low level of the Mattawa River, caused by dry weather, it was stated, resulted in drastic cuts in power supplied to the town by the Mattawa Electric Light Company.

★

ANOTHER PRODUCTION INCREASE

Production of domestic washing machines advanced 3 percent in June over the corresponding month last year, while output of electric refrigerators rose 30 percent in the same period, according to the Dominion Bureau of Statistics.

★

NEW SERVICE CENTRE AT GRAVENHURST

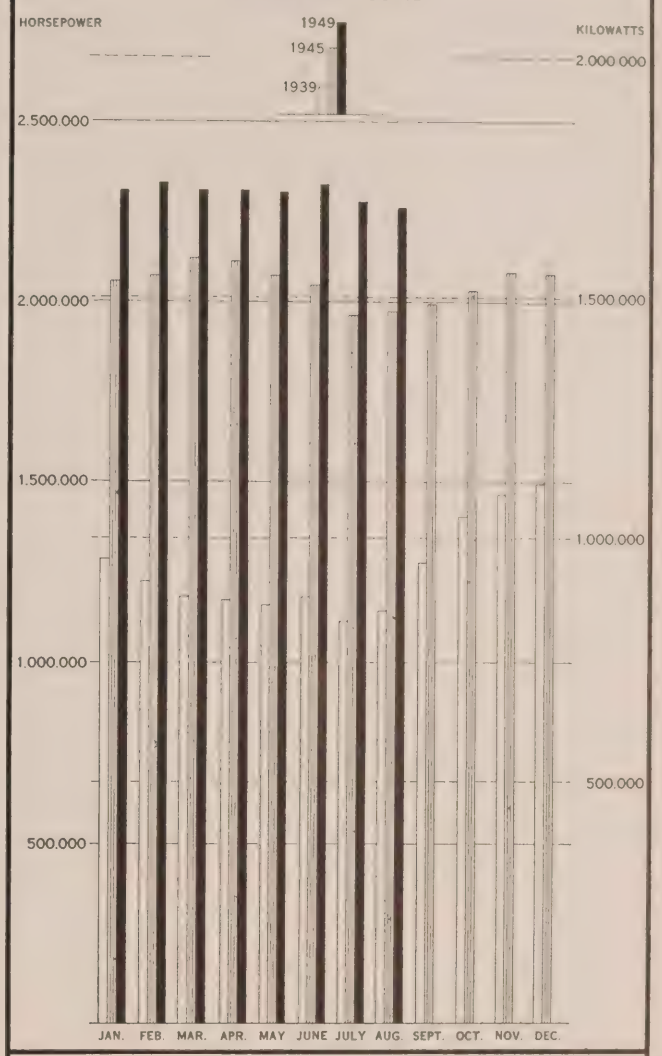
Construction of a Hydro garage and service centre in Gravenhurst is being undertaken by the Commission at present. Footings have been laid and work on the cement block structure is now under way. The new building will be approximately 100 x 70 feet in size and space will be provided for an office as well as other facilities for shop and maintenance crews.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW AUGUST, 1949	AUGUST, 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System...	1,821,880	1,828,950	− 0.4
Thunder Bay System.....	161,766	115,528	+ 40.0
Northern Ontario Properties.	213,024	196,031	+ 8.7
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System...	1,686,080	1,651,635	+ 2.1
Thunder Bay System.....	165,766	119,028	+ 39.3
Northern Ontario Properties.	213,024	240,206	− 11.3



Robed in autumn dress, the wooded banks of the Ottawa River are mirrored in the placid surface of the "deep river" section near the quoint village of Des Joachims.

HYDRO News



DES JOACHIMS

VOL. 36 NOVEMBER 1949 NUMBER 11

Ontario Hydro
forges ahead!

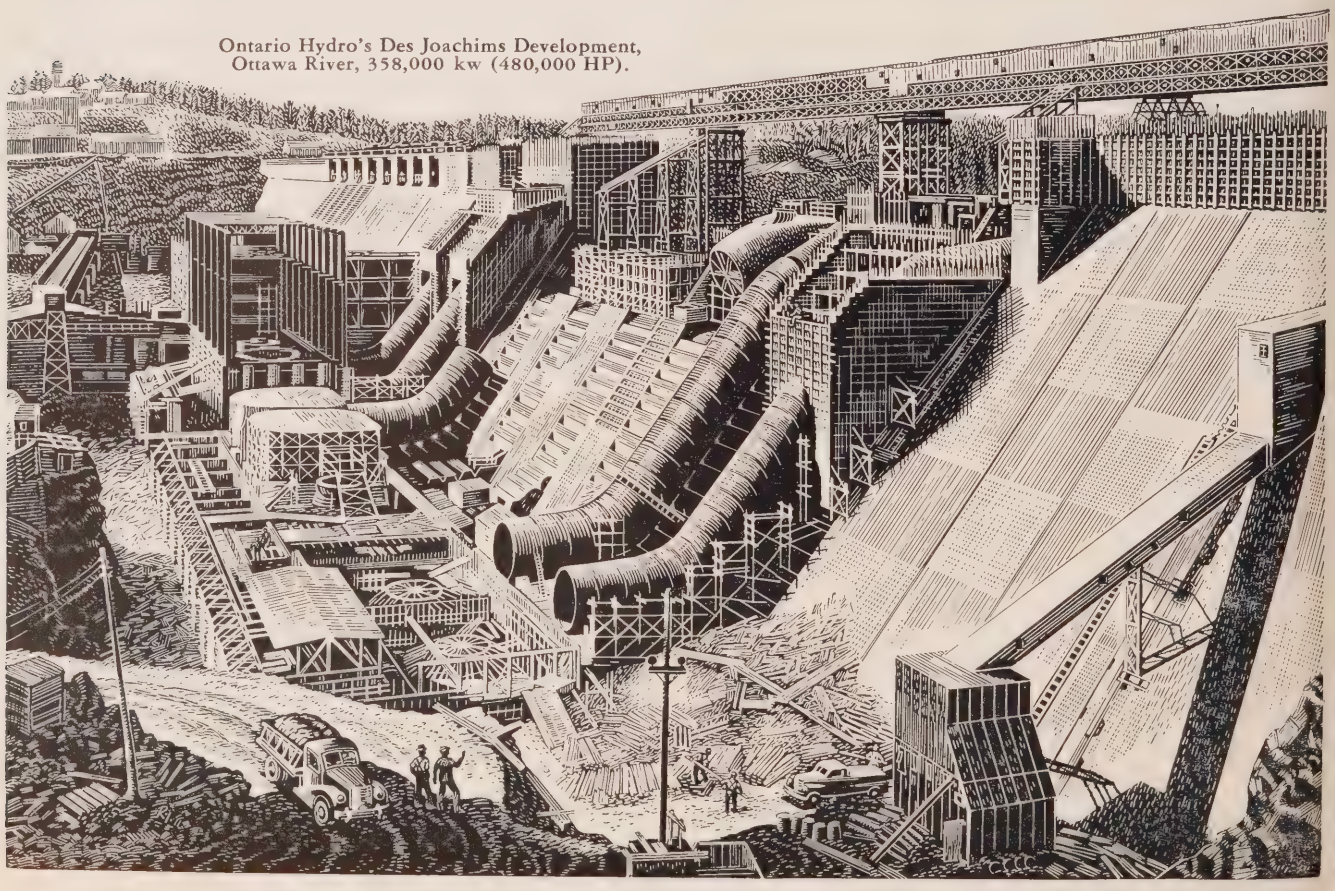
11 NEW POWER PLANTS—OVER 1,600,000 HP!

A rising level of industrial activity, a rapid increase in commercial and domestic loads, and widespread extensions to rural service in Ontario have brought about a very large growth in the use of electrical energy.

To meet this increased demand and to provide for future requirements, The Hydro-Electric Power Commission of Ontario has well under way a large scale expansion and development program. A total of 11 new power projects will add to Ontario's power supply more than 1,200,000 kilowatts (over 1,600,000 horsepower). Of this amount 162,500 kw (217,500 HP) is now being delivered to Hydro consumers from 4 completed projects. A further 460,000 kw (616,500 HP) will become available in 1950 and the balance in 1951 and 1952.

The Commission is also engaged in a frequency-conversion program in a section of the province, so that 60 cycles will be the standard frequency throughout Ontario.

This huge two-fold program will enable the Commission to provide still better service to the industries, farms and homes of Ontario, contributing to a high standard of living and helping to maintain production at peak levels.



Ontario Hydro's Des Joachims Development, Ottawa River, 358,000 kw (480,000 HP).

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER SHOTS

CONSTRUCTION is being pushed vigorously at Des Joachims, Hydro's senior postwar power project, as this month's front cover illustration, showing night work in progress would seem to indicate. Rugged grandeur of the Montreal River near Cobalt, is depicted in the photograph on the back cover.

(Photography by J. B. Helling)

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Canada
Remembers

CAUSE FOR GRATIFICATION

THERE is cause for gratification in the news that present indications point to the likelihood of this being the last winter during which it will be necessary to introduce restrictions in the use of electricity and enlist the co-operation of all consumers in voluntarily saving power.

At the time of writing, a number of new plants are reaching a very advanced stage of construction. From three developments alone, now under construction on the Ottawa River, the resources of Hydro will be augmented by 622,000 kilowatts (832,000 hp) over the next three years. More than half of this power will come from the Des Joachims plant, which is scheduled for completion next year and which will generate 358,000 kilowatts (480,000 hp).

The Chenaux generating station, whose capacity will be 120,000 kilowatts (160,000 hp) is scheduled to be completed in 1951. The following year — 1952 — LaCave, which is the third of the three developments Hydro is building to harness the waters of the Ottawa, is expected to be in service and delivering 144,000 kilowatts (192,000 hp).

In addition to these easterly developments, Hydro is forging ahead with two plants in northwest Ontario. Tunnel, a spectacular canyon project on the Mississagi River near Thessalon, is scheduled for completion early in 1950, and will furnish 42,000 kilowatts (56,500 hp) for the Sudbury, Nipissing and Timiskaming districts. Pine Portage, on the Nipigon River, with an ultimate capacity of 120,000 kilowatts (160,000 hp), will commence initial delivery of 60,000 kilowatts (80,000 hp) next year. Its power will augment the resources of the Commission's Thunder Bay System.

Not confining itself entirely to hydraulic projects, Hydro has begun the construction of two steam generating stations, one located at Windsor and the other at Toronto. The former, now well under way, is expected to deliver power from two of its projected four units by the fall of 1951. At approximately the same time, 200,000 kilowatts (267,000 hp) will be made available from the Toronto Steam Station.

To ease the power situation until these plants are ready for operation, emergency steam stations are being erected on the Toronto waterfront and in Thorold, Hamilton, and Chatham. The latter three will utilize surplus steam from industrial plants, while the former, the so-called "Scarboro" emergency steam station, will burn coal for its own steam. Between 60,000 and 70,000 kilowatts will be provided by these plants, which are scheduled to come into service progressively this winter.

These facts accentuate the all-out effort which is being made by Hydro to end the power shortage. Meanwhile, it is vitally important that all consumers in Southern Ontario give the same wholehearted co-operation this winter they gave last year by saving electricity at all times, and in every way. This kind of co-operation will make it possible to make more power available for the most essential purposes in maintaining production and employment at a maximum level.

It's good business to save power at a time when it means bigger pay envelopes for so many people.

A concerted voluntary saving effort this winter will mean also a minimum of inconvenience for everyone. It will help Hydro hasten the time when there will be more power for use in the factories, homes, offices, mines, on farms and in other avenues of progressive enterprise as Ontario marches forward to a future which is bright beyond words.

DISTINGUISHED VISITORS

A STORY in this issue of Hydro News directs attention to the visit of 32 members of the British Electricity Authority to this continent. Their mission, extending over six weeks, until December 10, is to gather information related to power industry techniques.

The only Canadian visit of the party was to Niagara Falls. Their tour included an inspection of Hydro's Queenston-Chippawa plant where the distinguished visitors formed many interesting impressions. At the same time, there was an opportunity provided for an exchange of information between the British and Hydro's engineers.

Also in recent weeks, an eminent world statesman in the person of Pandit Nehru, took time out to visit the Queenston plant where his signature was recorded in the Visitors' Book. The Indian Prime Minister was deeply impressed by what he saw and indicated his desire to do everything he can to hasten the construction of more hydro-electric plants in his own country.

Visits such as these can help pave the way for an exchange of information which can be mutually helpful.



Niagara and Nehru

by
C. G. W. Macintosh
Hydro News

NIAGARA's cataracts cast their magic spell over a distinguished world leader, as he stood at the brink of the waterfall, "drinking in the scene" with awe and admiration. The visitor — Pandit Jawaharlal Nehru, India's Prime Minister, who saw the falls for the first time last month — expressed his feelings in simple language.

"The falls," he said, "exceed my expectations, and I had expected much."

And the cataracts provided more than just scenic wonderment for Prime Minister Nehru. He saw in the mighty Niagara River and its world famous falls the true value as a source of electric power.

What India's leader had seen at the Falls and later at Hydro's largest generating station, the Queenston-Chippawa power plant, seemed to make him reflect on power problems in his native land. For he remarked that the people of India are making a tremendous effort to harness the country's water power resources.

"We have," he said, "half a dozen projects greater than the Tennessee Valley job, and a score of smaller ones."

Continuing, he revealed that "Canadian technicians are advising our men. And one of my main interests in Canada is to discuss whether more technicians can come to us."

Pandit Nehru, his daughter, Mrs. Indira Gandhi, and others were conducted through the Queenston-Chippawa plant, largest of Hydro's generating stations, by Chairman Robert H. Saunders, and R. L. Hearn, Hydro's General Manager and Chief Engineer.

For the Indian Prime Minister, the tour through the big generating station was one of great interest from the time he signed his name in the visitors' book in the plant's reception hall.

The control room with its maze of dials, levers, buttons, lights and meters proved fascinating and interesting. On hand to help answer his questions was one of his own countrymen, Bindeshwara Modwel, an Indian engineer who is employed by Hydro. The quiet-spoken, immaculately dressed and distinguished looking visitor chatted freely with his conductors and plied them with questions.

One part of the plant that seemed to prove intriguing for the notable visitor was the generator room with its ten huge generators capable of producing 525,000 hp. In the generator room where a large turbine runner is displayed, an explanation of the function of this unit was given by Chief Engineer Hearn.

Mr. Nehru seemed to have been greatly pleased with the tour for he expressed his gratitude to Chairman Saunders and Mr. Hearn, for the personally conducted trip through the Queenston-Chippawa generating station. This tour, he declared, was one of the highlights of his visit to Niagara Falls.

NOW NEHRU KNOWS!

A YOUNG RCAF veteran who knew the answers about the geology of the lower Niagara River, stole the limelight during the visit of India's Prime Minister, Pandit Jawahrarlal Nehru, to Niagara Falls.

Maury Brooker, the third generation of the Brooker family to operate the Whirlpool Aero Car across the Niagara River gorge had a five-minute chat alone with Premier Nehru. He accomplished what newspapermen had been trying to do all weekend.

It all happened when the Indian Prime Minister and his party, accompanied by Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario, and a large group of newsmen, paused for a few minutes beside the whirlpool for an inspection of the Aero Car and the pool.

"Can anyone explain this to the Prime Minister?" Chairman Saunders called out, pointing to the gorge.

Up stepped Maury Brooker, and gave his talk on the gorge, proving that no better choice of narrator could have been found for the occasion.

At the close of the talk, Premier Nehru extended his hand to the young veteran and thanked him, and the Indian party moved on.

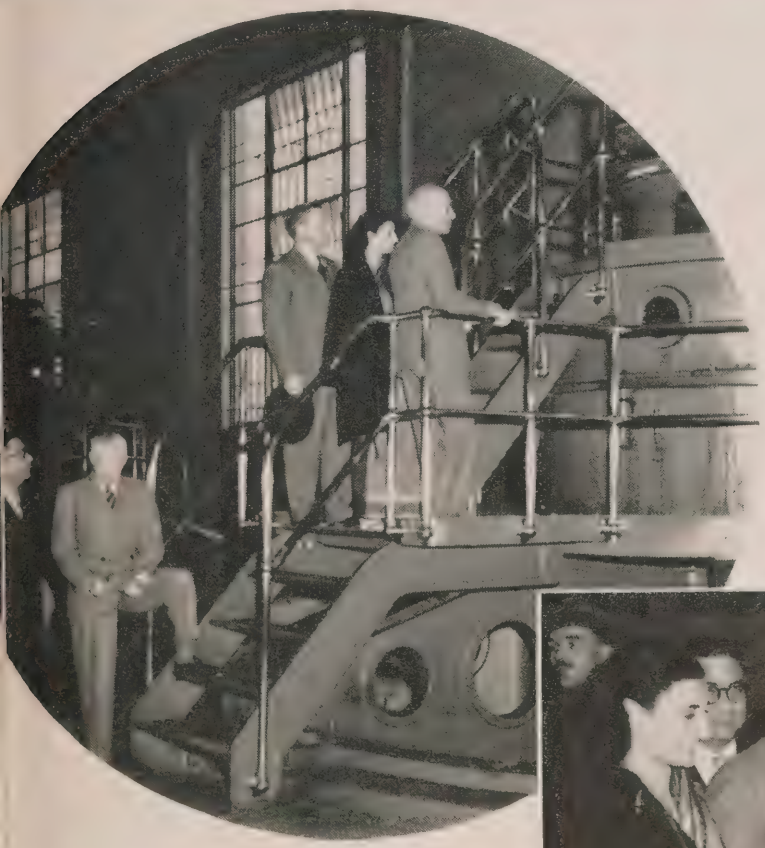


LEFT, EXPLANATION of function of turbine runner was given to Pandit Nehru and his daughter, Mrs. Gandhi, by R. L. Hearn, General Manager and Chief Engineer.



ABOVE, INDIA'S Prime Minister signs the visitors' book at Queenston as Chairman R. H. Saunders looks on.

★



BELOW, CHAIRMAN Saunders points out some features of control room. Listening, left to right, are Mrs. Gandhi, Prime Minister Nehru, R. L. Hearn and B. Modwel.



ABOVE, CLOSE-UP inspection of one of the big generators in Queenston G.S. is obtained by Prime Minister Nehru and daughter, Mrs. Gandhi. Chairman Saunders discusses generator with them.



STRUCTURAL steel girders of the Des Joachims powerhouse.

THEY SAW FOR THEMSELVES

Many Officials Of Companies Which Supply Materials, Equipment To Hydro Visit Des Joachims And Chenaux

A REPRESENTATIVE cross-section of top management in Canadian industry had an "on-the-spot" view of Hydro activity in the Ottawa Valley recently when the Commission played host to 130 executives at its Des Joachims and Chenaux Developments.

The group comprised officials from many of the companies which supply Hydro with materials and equipment essential to its expansion program and for the efficient maintenance of its day-to-day operation. Accompanying the visitors were Commission Chairman Robert H. Saunders, Richard L. Hearn, General Manager and Chief Engineer; W. Ross Strike, K.C., Second Vice-Chairman; Dr. Otto Holden, Assistant General Manager —Engineering; A. W. Manby, Assistant General Manager — Administration; H. W. Beck, Director of Supply; J. R. Montague, Director of Engineering; David Forgan, Director of Construction; J. M. Hambley, Director of Operations; and H. H. Leeming, Director of Frequency Conversion.

On arrival at Moor Lake, Des Joachims' Grand Central Station, and following breakfast in the camp cafeteria, the group repaired to the recreation hall where Dr. Holden explained interesting features of the Des Joachims project.

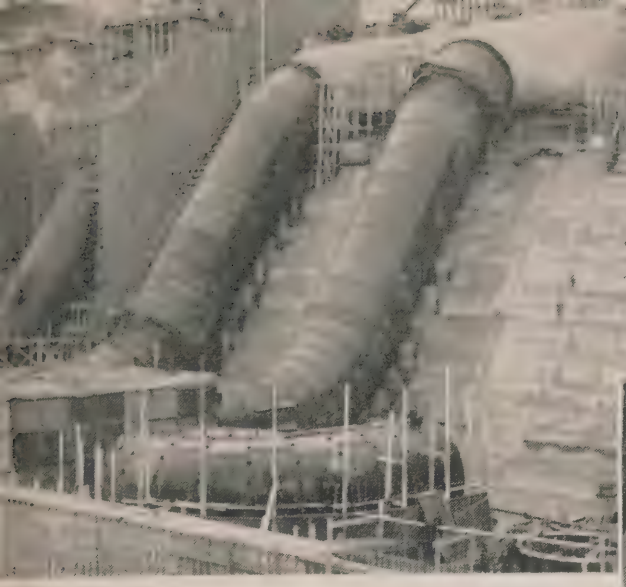
Balance of the morning was spent in a tour of the job under the direction of Gowan Guest, the Commission's chief guide at Des Joachims.

As is unfailingly the case with anyone seeing the project for the first time, the over-all magnitude of Des Joachims evoked unanimous expressions of awe and admiration from the visitors. With the closure operations completed, the two sides of the main dam presented a remarkable contrast. On the upstream face, the once-violent waters of the Ottawa had subsided into a placid lake stretching back upstream, while on the downstream side, now completely dewatered, activity was proceeding with feverish haste on the completion of the power site. From atop the hill on the Ontario side the penstocks looked like huge earthworms burrowing out of the face of the

(Continued on page 31)

TAKEN FROM the access bridge below the dam this photo shows visitors watching construction in powerhouse area.







APID PROGRESS being made at Des Joachims is illustrated by is view of the main dam and powerhouse structure showing the stallation of the giant 22-foot diameter steel penstocks.

★

BVIOUSLY ENJOYING themselves, J. H. Martin and G. R. rant of Toronto were caught by the Hydro News camera.



★

GHLIGHTS OF the Des Joachims Development are here being plained by Hydro General Manager and Chief Engineer R. L. earn, second from left, to C. S. Band, T. H. McLaren, Toronto.



★

NE OF those mammoth Des Joachims breakfasts was directly sponsible for all the smiling faces in this photograph.

★

HECKING A few statistics about the job is this quartet, who om left to right are D. C. McKellar, Norman Franks, H. W. ck, Director of Supply, H.E.P.C., and Leonard Lumber.

★

OVISABILITY OF wearing that hard hat is being demonstrated by W. Manby to R. L. Hearn, H. F. Turner, M. B. Hastings and airman R. H. Saunders, during tour of Des Joachims project.









WARM WELCOME was given to Hydro's Chairman, Robert H. Saunders, when he arrived to address delegates at District No. 5 O.M.E.A. fall convention and annual meeting at the Belgian Hall in Delhi. D. P. Cliff of Dundas, extreme left, newly-elected president of District No. 5, is shown introducing Hydro's Chairman to the delegates. Chairman Saunders spoke at the annual banquet following the business sessions.

DISTRICT NO. 5 MEETING

NEARLY TWO feet long, this cigaret, product of Delhi's rich tobacco area, is being lit by Second Vice-Chairman Ross Strike aided by M. J. McHenry, Hydro's Director of Consumer Services.

CHIPPAWA'S REEVE tells good story to Niagara group and Second Vice-Chairman Strike. Left to right in front: Reeve George Bukator, Chippawa; John Weir, Stamford Township; Stanley Thomson, Niagara Falls and Mayor Lewis McConkey, Niagara-on-the-Lake. In the rear are Robert Callan of Chippawa, and W. Ross Strike, K.C., Hydro's Second Vice-Chairman.

RETIRING PRESIDENT congratulates newly-elected District No. 5 president, as other officers look on. Left to right are: K. V. Bunnell, Brantford, Director; D. P. Cliff, Dundas, new president; K. C. McLeod, Stamford Township, Director; Roy Pierson, Brantford Township, retiring President; Mayor L. McConkey, Niagara-on-the-Lake, Director; W. Waterson, Welland, Director; and T. Barnes, Niagara Falls, Director.





Greater Expansion Predicted

★

Increase Of 12,000,000 Kilowatthours Weekly Over Last Year In Use Of Energy In Ontario, Rothwell Tells District No. 5 Delegates

★

by
C. G. W. MacIntosh
Hydro News



ADDRESSING MEETING is H. D. Rothwell, Hydro's Administrative Assistant—Regions. He gave the keynote talk of the session. President Roy Pierson, left, and H. A. Howard, listen intently.

USE of electrical energy in Ontario has increased by over 12,000,000 kilowatt-hours weekly this year compared with 1948, H. D. Rothwell, Hydro's Administrative Assistant—Regions, advised members of District No. 5, O.M.E.A., at the annual meeting held October 12 at Delhi.

Reason for the increased use of electric power, Mr. Rothwell said, was due to Ontario's phenomenal industrial growth. He predicted the possibility of an even greater industrial expansion because of the devaluation of the Canadian dollar, pointing to the stimulus which would result if U.S. branch plants increased their manufacturing operations in Canada. Another reason for the increased use of electrical energy was the rapidly expanding population of the province. The speaker declared that the growth of Ontario in recent years has been tremendous and maintained that the latest population figures would be a revelation.

Must Observe Restrictions

Mr. Rothwell strongly emphasized the need for power restrictions being observed rigidly in all municipalities and stated that instructions had gone out to Hydro Regional Managers to have Area Managers carry out power restrictions to the letter of the law. In cases of rural infractions of the regulations, Mr. Rothwell advised letting the Area Managers know immediately.

A resolution recommending the periodic inspection of municipalities by The Hydro-Electric Power Commission of Ontario was discussed and adopted.

W. Ross Strike, K.C., Second Vice-Chairman of The Hydro-Electric Power Commission of Ontario, was invited to outline the import of the proposed periodic municipal inspection by the Ontario Hydro. He pointed out that it would mean the setting up of a municipal distribution standards system similar to that now in effect for rural systems. He declared that this was a matter which had been considered by the O.M.E.A. for several years and that it would be to the advantage of the municipal managers. The municipal standards system data would be available for all local managers to study. No attempt would be made by the Ontario Hydro to enforce the standards requirements unless service deteriorated to the point where consumers actually were suffering.

Steps to be taken to set up the standards system would include the appointing of a committee made up of engineers from the Ontario Hydro together with a group from the O.M.E.A. and the A.M.E.U. to work out the standards. The Ontario Hydro would make periodic inspections in municipalities if requested, and reports would be sent to the local commissions.

Advantages of the standards system were that in cases of serious trouble in a municipality, other centres in Ontario could send in assistance and materials. The materials would be the same and this would mean a reduction in construction costs because municipalities could buy together in large quantities.

Discusses Meter Pool

A short discussion was held on Hydro's proposed meter pool during the frequency conversion period. M. J. McHenry, Hydro's Director of Consumer Service, was asked to outline the plan

Mr. McHenry stated the meter pool would be a method by which meters in

(Continued on page 30)



IT WOULD be a tragedy of the first magnitude if the campaign to raise that additional $4,000,000 required to complete construction of the Hospital for Sick Children were to fall short of its objective.

In making a public appeal for funds, R. A. Laidlaw, Chairman of the Board of Trustees, enlisted the co-operation of the Canadian Industrial Editors Association, and there was unanimous agreement on the part of the executive that this was a cause worthy of every support. As an active member of that association, we are happy to serve this cause to the best of our ability by bringing the need to the attention of our readers.

We feel that it should not be necessary to resort to eloquent pleas to make people understand that every single dollar bill is important in reaching this objective. People who have children do not have to be "sold" on the idea that such an institution is a vital necessity and that the present facilities are very inadequate in relation to the very, very wonderful role this hospital has been filling down through the years. Indeed, Toronto's Hospital for Sick Children has a world-wide reputation. Within its doors, children from far and near, through the ministrations of a highly skilled staff, have been restored to their parents, healthy and happy.

The need for this additional $4,000,000 is due to the fact that building costs have almost doubled since the original plans for the fine structure on University Avenue were prepared.

People at Hydro have a full appreciation of this fact in carrying out the tremendous program of construction which is now under way to bring new power plants into service.

We do not feel that we would be guilty of a breach of etiquette if we were to mention interesting views expressed by one of the editors who serves on the C. I. E. A. executive, not only in relation to the Hospital for Sick Children but in relation to other hospitals and the Red Feather Campaign.

"Why in the world," declared this editor, "should it be necessary to organize and promote special campaigns for such worthy causes? If we could all be realistic about these things, we could do a bigger and better job — if we brush away a lot of the cobwebs and operate hospital and Red Feather sweepstakes on a national scale. Look at the Irish Sweepstakes and the way in which the Irish hospitals benefit. Millions of people on this continent buy these tickets year after year. While I'm not interested, personally, in buying them, I would willingly dig out a five-spot for a Canadian Hospital or Red Feather ticket if such tickets were sold under approved government auspices and the proceeds, less prize money, were to be used to benefit less fortunate people in Canada."

Personally, we are inclined to think that our fellow editor has something there, especially when we consider the high cost of hospitalization and the lack of nurses. It seems logical to assume that funds raised through national sweepstakes could be utilized to lower hospitalization costs all round and, at the same time, make the nursing profession more attractive to more people from a remunerative standpoint. Considerable sums of money could be raised very easily if two national

by
The Editor

sweepstakes were conducted every year for hospitals and two for Red Feather services and we feel sure that the majority of people would willingly pay $20 a year at a minimum toward these worthy causes and for the chance of winning a worthwhile prize. All the arguments in the world, it seems to us, will not change human nature. If there is a strong incentive to buy them, people will buy sweepstake tickets — and be glad to pay $5 a shot — and they will be happy to know that their money is to be used for worthy causes.

That is our personal opinion on the subject. Meanwhile, we do not have national sweepstakes at present and so it is the duty of everyone to get behind this campaign launched by the Hospital for Sick Children and make sure that this work of mercy is not impeded by lack of money.

ONE OF the most amusing incidents we have heard about in many years was related to us recently by a young lady who visited Britain this past summer. We can vouch for the authenticity of this story. It appears that the lady in question made a reservation at a well-known hotel in London. She was just in the act of retiring when she turned over the pillow and, lo and behold, there was a pair of gentleman's pyjamas! The trousers! Overcome, momentarily, with embarrassment, the young lady summoned a maid to the room, indignantly flaunted the offending pyjamas in the latter's face and demanded an explanation. There were profuse apologies from the management. The young lady returned to Toronto and just recently, she received a card from the hotel management. It advised her that she had left her pyjamas and did she want them returned. We cannot publish the lady's meditations!

A NEWS story we read recently states that a man of "note" — a well-known orchestra leader — following an argument, struck a gentleman over the head with a trumpet. It seems to us that this is carrying the "downbeat" too far!

CALLING A Naturalist! A lady writes to say she cannot find anyone who can tell her the name of a plant she found and wonders if among Hydro's many distinguished personnel there is one who can give the answer. The plant, she says, is like any ordinary cactus, grows quite thickly and is about eight inches long. "But the flower," she writes," is strange and very lovely. It has five, star-shaped petals and is about the size of a field daisy. It has a tiny calyx of five and in the centre are five other little jiggers where the stamen and pistils are supposed to be. Around the stamen grows a round roll, or ring, like a little rubber tire. The colour of the flower is a sort of flesh or fungus shade, covered with small black spots; but when the light is on, it is a delicate green. I don't know how long the blossoms last, for it just came out the day I saw it."

Who can give the answer? Just drop a note to The Editor.

Not "Out of the Woods"

Imperative That Restrictions Be Observed, District No. 6 O.M.E.A. Delegates Warned — Greater Voluntary Conservation Also Needed

by
Grace J. Carter
News Editor

"ALTHOUGH I can say we are in a much better position with respect to power than we were last year at this time, and I don't believe that we shall be forced to impose any further restrictions on the folks of the Southern Ontario area, we are asking for greater voluntary conservation of power and the prevention of waste," declared Commission Chairman Robert H. Saunders at the annual meeting of O.M.E.A. District No. 6, at Preston, on October 26.

The Chairman went on to say that since deliveries of power from the Maclaren Power Company of Quebec had been cut by 3,385,000 kilowatt-hours a week, it was necessary to save about 550,000 kilowatt-hours each working day. He pointed out that this cut was not entirely unexpected at Hydro as it was known that while other storage basins were as high or higher than last year, the Maclaren Company's storages were substantially lower. This reduction, he said, would be offset in part by increases in delivery of power from the Gatineau Power and Canadian Niagara Power Companies. Since these increases, however, would not cover the total loss, strict compliance with the power regulations was imperative.

Realizing what they were up against, power restrictions had been instituted on October 1, the Chairman stated, and it was expected that with normal water flow during the next few weeks they would be able to get through the winter without any further restrictions or the allocation of power to the municipalities to such an extent that it would be necessary to make actual cut-offs.

"We were able to meet an increased demand," Mr. Saunders stated, "because of the increased generation of the Commission's plants and also because of the fact that we have been able to procure some 45,000 kilowatt-hours of electrical energy for the greater part of the day from the Canadian Niagara Company. In addition, we were able to bring into service some 14 auxiliary generating units with a total of 8,725 kilowatts of diesel and steam power."

Mr. Saunders also referred to emergency steam plants which would be coming into service progressively this winter at Hamilton, Scarborough, Chatham, Thorold and Welland. In other words, he stated, they anticipated that between now and December 15, they would have at least 40,000 kilowatts of these small packaged units in service, and by the first week in January they would have some 61,000 kilowatts of additional steam and diesel power which could be operated at a very high load factor.

A Tremendous Job

At another point, the Chairman made special reference to the tremendous job done by the Commission's Property Department. In 1945, he stated, there were a total of 1,056 settlements, meaning the purchase of property and the acquired rights to use the property. This year, up to date, there were 26,826 settlements. Out of those 26,826 cases, only 27 had been referred to the official valuator.

Mr. Saunders pointed out that representations had been made to the Commission by several municipalities regarding

(Continued on page 2)



WAITING FOR the lunch bell! This group of delegates at District No. 6 meeting are: R. M. McKenzie, Regional Manager, West Central; W. J. Jackson, West Central Region; J. E. Teckoe, Jr., H. R. Baer, Galt P.U.C., and G. F. Hutcheson, Huntsville.



Industrial Editors Tour Ottawa River Projects

by
Edith B. Kent
Hydro News

WITH one foot on a piece of the Laurentian shield, said to be one of the oldest rock formations in the world, and the other on one of man's newest inventions, a Bailey bridge, the industrial editor flung his head back to look at the towering mass of concrete and steel.

"This," he said, "is one of the most impressive examples I've ever seen of man putting nature to work. It's breath-taking."

He was referring, of course, to Hydro's Des Joachims development which, within the next year or so, will train the tumultuous waters of the Ottawa to produce 358,000 kilowatts, or 480,000 horsepower, of electricity.

This largest of the Commission's current construction projects was visited recently by a group personified by the aforementioned gentleman — men and women who edit or report for industrial publications, and are, therefore, closely associated with the various phases of industry in Ontario. Unanimous in their praises of Hydro hospitality, the editors declared themselves almost overwhelmed by the magnitude of the construction program.

Many of the companies represented by the visitors are suppliers of materials to the Commission, and their representatives were keenly interested in the way their products were being put to use.

See Hydro Projects

Included in the three-day visit were short tours of Hydro's two other Ottawa River construction projects, La Cave and Chenaux, and of Stewartville on the Madawaska River, as well as a more intensive circuit of various points of interest at Des Joachims. Conducting each of the tours was Chief Guide Gowan Guest.

First main stopping-point of the trip was La Cave, near the village of Mattawa. There the visitors saw excavation in progress for the diversion channel, where nearly all of the estimated total of 692,000 cubic yards of rock and earth had been removed. They were shown the long aggregate conveyor system, stretching from the stockpiles to the concrete mixing plant and thence to the beginning of the main dam. Standing on the Bailey bridge which spans the river, providing access to the diversion channel and the Quebec construction camp, they gazed down upon the bubbling, swirling waters whose energy, by 1952, will have been converted into 144,000 kilowatts (192,000 hp.) of electricity.

After dinner at the camp cafeteria, the party proceeded to Des Joachims, some 65 miles downstream, where they were greeted by a really spectacular view of the development under artificial lights. Much of the work on the project is carried on night and day, to speed the building of the plant, which, when completed, will be second in capacity among the Commission's generating stations.

By daylight, on the following day, the editors received a different but by no

(Continued on page 30)

Editorial Impressions



CHIEF GUIDE Gowan Guest points out features of the La Cave development to party of industrial editors. Here visitors saw main dam construction, diversion channel excavation.



CONTROL ROOM at Stewartville aroused keen interest among the group. Graphs, charts and meters, explained by operators, helped demonstrate transmission and distribution of power.



'HOTOGRAPHIC RECORD was made of many of the points of nterest on the three-day tour. Gentleman at left is "shooting" am and powerhouse construction at Des Joachims development.



INTERESTED QUESTIONS kept guide busy as visitors gained information about Hydro's vast construction program. Honeycomb of formwork forms background for statistical inquiries.



by
Boyd L. Graham
Hydro News

MEETING in the Chateau Laurier, Ottawa, during October this year, delegates from member municipalities of the Eastern Ontario Municipal Electric Association heard Hydro Chairman Robert H. Saunders declare: "It is our aim to give equal protection to every community in this province!"

In amplifying this remark, the Chairman pointed out that the Hydro steam generating stations being constructed at Windsor and Toronto are for the benefit and protection of peak loads in every section of the province, not for the benefit of the people and industries of Windsor and Toronto alone.

Speaking at the luncheon tendered by the Ottawa Hydro-Electric Commission at the close of the two-day sessions in the Capital, Mr. Saunders gave his listeners a full-scale review of the power situation in Ontario. At the same time, he provided a fast-moving resume of the Commission's half-billion dollar expansion program and its still greater developments contemplated for the future.

For Every Community

At the outset of his address, the speaker stressed the importance of making low-cost electric power in abundance equally available to the people of every community in order to permit a continuance of the present industrial expansion throughout Ontario.

"It is for this reason that our Commission is forging ahead on a great construction program, calling for an expenditure of $582,311,764. Of this amount, $295,074,400 is for new power generation," he pointed out.

In order to make the new power available to every section of the province, $82,251,529 was being provided for high voltage transmission lines and $94,717,291 for high voltage transformers, switching and frequency changer facilities. In addition, the sum of $56,075,233 was being spent on rural construction while miscellaneous projects would cost $54,193,311.

"In other words, we, at Hydro, are endeavouring to the best of our ability to protect every section of Ontario and to make power available to new industries wherever they might desire to locate," Mr. Saunders stated.

In this connection, he continued, plans were in the making for the construction of additional transmission lines and transformer facilities in the eastern section of Ontario, so that the people in the counties on the south side of the Ottawa River and, throughout this part of Ontario, would have available to them the entire resources of the additional 1,500,000 horsepower of

Photo by E. A. Johnston

CAPITAL CONVENTION

E.O.M.E.A. DELEGATES GET FACTS ON POWER SITUATION

electrical energy included in the great postwar program.

Rural Expansion

Dealing specifically with rural construction in Eastern Ontario, the Hydro Chairman told his audience that this section of the province had 6,971 miles of rural line at the end of 1948, as compared with 4,761 miles in 1944. Up to September 30 this year, rural areas of Eastern Ontario had a total of 8,247 miles with a goal of 8,625 miles for the end of the fiscal year in October. Expressing confidence that this goal would be reached, Mr. Saunders predicted a total rural mileage in Eastern Ontario almost twice the figure for 1944. In regard to rural consumers, this part of Ontario had a total of 16,976 in 1944. This figure was more than doubled by the end of 1948 with a total of 37,946 rural Hydro consumers

Turning to the power situation, Hydro's Chairman alluded to the difficulties facing the Commission at the present time "In the opinion of those at Hydro who ought to know, our difficulties are of a very temporary nature and we hope they will entirely disappear next year."

Declaring that "the picture, in general, has improved," Mr. Saunders stated that the increase in the primary weekly demand of some 12,300,000 kilowatt-hours over a year ago was being met by increased generating facilities in addition to arrangements for further power made during the past year.

"Although we have been able to meet this increased demand, I assure you it is 'nip and tuck', and, in some respects, we are greatly concerned," he continued.

Pointing to the next few weeks as the "trying period," Mr. Saunders made a strong plea for the full co-operation of all consumers in saving power and avoiding the necessity of cut-offs.

"It is our hope at the end of this short, but critical period, to be able to ease the present restrictions," he also stated, referring to the increased generating facilities of over 60,000 kilowatts or 80,000 horsepower which would be brought in during the next six or seven weeks, plus the additional 1,250,000 kilowatthours per day to come from the DeCew Generating Station at the close of navigation.

The Future

Looking into the future, the speaker voiced the belief that "we are safe up to

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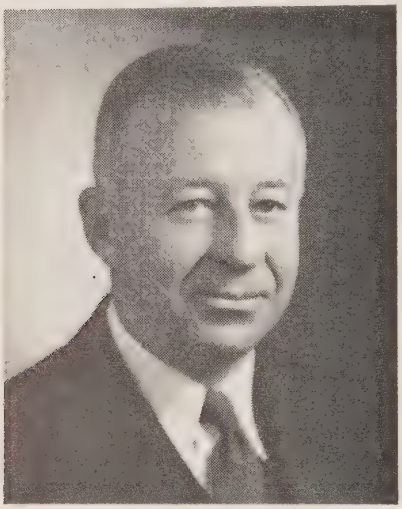


AT THE annual convention in Ottawa this year, E.O.M.E.A. delegates re-elected the same executive for the coming year. They are pictured above, front row, left to right, James Harris, Kingston, O.M.E.A. Executive representative; S. J. Babe, Oshawa, Vice-President; Frank H. Plant, Ottawa, President; H. B. Tully, Picton, Vice-President; Back row, G. E. Findlay, Carleton Place, O.M.E.A. Executive representative; M. J. Elliot, Bowmanville, Director; Dr. R. A. Patterson, of Kemptville, Director; S. W. Canniff, Ottawa, Secretary-Treasurer, and O. H. Scott, of Belleville Auditor. Meeting was held on October 13 and 14.



HIGH HONOUR FOR HYDRO ENGINEER

John Maclellan Named Chairman Of Public Utilities Section Of National Safety Council



JOHN MACLELLAN, Safety Engineer of The Hydro-Electric Power Commission of Ontario, has been elected General Chairman of the Public Utilities Section of the National Safety Council whose headquarters are in Chicago, Illinois.

Mr. Maclellan is the second Canadian to receive this high honour since the formation of the section 34 years ago, the first Canadian so honoured having been another Ontario Hydro engineer in the person of Wills Maclachlan who held that post in 1919 and 1920.

A graduate in engineering of the University of Toronto, Mr. Maclellan became associated with Hydro in 1929. He has served for several years on various committees of the National Safety Council and is a member of the Association of Professional Engineers of Ontario.

The National Safety Council was organized in Milwaukee in 1912, and the Public Utilities Section came into being in Philadelphia in 1915. Through the publication of pamphlets, bulletins and news letters and the organization meetings, the Section stresses the necessity for accident prevention among the employees of public utilities in Canada and the United States.

NAMED ASSISTANT GENERAL MANAGER

APPOINTMENT of George Roland "Cap" Davies, as Assistant General Manager of the Ottawa Hydro-Electric Commission became effective during October.

Member of a widely-known Eastern Ontario family, Mr. Davis, now in his 46th year, was born and received his early education at Smiths Falls. His father, the late Captain G. A. Davis, operated a steam boat on the Rideau Lakes for many years.

Graduating from Queen's University, Kingston, in 1927, with a B.Sc. degree



in electrical engineering, Mr. Davis became associated with the Commission as a meter and relay engineer. He served in this capacity until 1934 when he assumed the position of Supervising Engineer with Hydro's Operating Department. In 1937, he was appointed Superintendent of Substations and Engineer by the Ottawa Commission continuing to serve in that position until his recent appointment as assistant to S. W. Canniff, General Manager and Chief Engineer.

An ardent hunter and fisherman, Mr. Davis is also actively identified with church and Y.M.C.A. activities with Capital.

G. E. CHAMBERLIN DIES

MEMBER of the Brantford Public Utilities Commission since 1944, Chairman in 1947, and a well-known business-



man, George E. Chamberlin died recently at his home, at the age of 63.

Born in Ottawa, Mr. Chamberlin moved to Brantford 40 years ago. He became associated with the Machine Telephone Company, pioneers in the automatic telephone field. He travelled extensively in Canada, the United States and parts of Europe in the interests of the company with which he was associated for 23 years.

When the company was absorbed by the Bell Telephone Company in 1925, he turned to the confectionery business which he and his brother Clifford had purchased in 1919. At the time of his death, he was still active in the business. Machine Telephone Company provided him with excellent qualifications as a Public Utilities Commissioner, since telephone and Hydro officials have many problems in common, from the point of view of service and line construction.

Tribute was paid to the late Commissioner by the present P.U.C. Chairman, K. V. Bunnell, who stated that "George Chamberlin was always painstaking in his service to the public.

Hydro at the "MATCH"



WITH A larger attendance and a bigger entry list than ever before Ontario's 36th International Plowing Match was held at Burford in Brant County on October 11-14. Those who directed the big event estimate that this year's match, which was staged on the farm of H. W. Amy, near Burford, a few miles west of Brantford, attracted an attendance of well over 200,000. Actually there were 1,178 entries in the various competitions, an increase of 248 over last year. The biggest day was Thursday (October 13) when 75,000 persons passed through the turnstiles. Some conception of the magnitude of the "Match" is afforded by the photograph at the top of this page which provides an excellent view of the "Tent City" which had a total frontage of over 1½ miles. At the head of the main street of this tented city Hydro set up its exhibit which attracted hundreds of interested spectators.



CENTRE—On behalf of the Commission, Denton Taylor, Consumer Service Superintendent, West Central Region, presents a small electric motor to George Timbers, of Stouffville at the final banquet.

LEFT—Hydro set up its exhibit at the "Match" in this tent. Featuring several interesting displays, the exhibit was a centre of interest for many visitors.



IMPRESSIVE CLOSE-UP views of both cataracts at Niagara Falls and Hydro's Ontario Power plant featured a trip on the "Maid of the Mist" arranged for members of the British Electricity Authority. The Britons were guests of the navigation company.

GETTING THE ANSWERS

British Engineers Visit Hydro's Queenston-Chippawa Plant

by
C. G. W. MacIntosh
Hydro News

GETTING the answers was the task that 32 members of the British Electricity Authority set for themselves when they arrived on this side of the Atlantic late last month. Their quest was for information which might help to improve British power generation and distribution methods. The Britons, composed of two teams of 16 members each, have planned to take a long, hard look at North American power industry techniques to determine if improvements could be made in British methods.

Only Canadian visit of the British group was made on October 30 to the important power city of Niagara Falls. Highlight of that visit was an inspection trip through Hydro's largest generating station, the Queenston-Chippawa power plant. The Britons were greeted at the border city by leading engineers and executive officers of The Hydro-Electric Power Commission of Ontario. They were taken on a brief scenic tour of the area concluding with the visit to the big Niagara River generating station.

Headed by R. L. Hearn, Hydro's General Manager and Chief Engineer, Dr. Otto Holden, Hydro's Assistant General Manager — Engineering, and other distinguished engineers and officials of the Commission, the Hydro leaders explained details of the operation of the plant to the Britons. Interest was keen in all phases of the plant operation and many of the visitors took copious notes on what they had seen and learned. The tour was particularly illuminating to the Britons because most of them were familiar only with thermal generation methods.

A comment frequently repeated by the visitors during the plant inspection tour was one of amazement over the cleanliness of Hydro's big plant. Equally impressive for the Britons was the fact that the plant could be operated by only a "handful of personnel."

Mutual Exchange of Information

During the inspection tour of the generating station, the British engineers and Hydro's engineers had many opportunities for a mutual exchange of information. Valuable personal contacts were made which engineers of both countries felt should be mutually beneficial and which could be expected to lead to further exchanges of information and technical data.

Opportunity for six weeks of study has been provided the British power experts, and they will remain on this side of the Atlantic until December 10. The trip was arranged under the auspices of the Anglo-American Productivity Council, a group formed to help British industry increase its output-per-man. It is all part of the Marshall Aid plan and it is hoped that first-hand information and "on-the-spot" observations will enable Britons to make the most of the aid program.

R. B. Richardson, of the Yorkshire Electricity Board, is the leader of the British distribution team, and one of the leading power experts in Britain. Equally as distinguished in his field is the leader of the generation team, William Tulip of Newcastle-on-Tyne.

Hydro's Chairman, Robert H. Saunders, and Mayor William L. Houck, MLA, of Niagara Falls, Ontario, jointly welcomed the British party and also a group of leading American power officials and

(Continued on page 22)





TOP—AERIAL view of the giant whirlpool and raging rapids of the lower Niagara River from the Whirlpool Aero car was an added thrill for the visiting British engineers. The British group, with Hydro representatives, are shown boarding the cable car for the interesting trip across the Niagara gorge.

★



CENTRE—AFTER the interesting tour of the Falls area and Hydro's Queenston plant, the visitors express their thanks. Left to right are Russell Stuart, ECA representative, William Tulip, generation team leader, Chairman Saunders, Mayor W. L. Houck, and R. B. Richardson, distribution team leader.

★

LOWER—PLANT'S cleanliness impressed the British visitors during their tour of Hydro's big Queenston Generating Station. Members of the party with their Hydro hosts are shown standing around one of the big generators. The ten Queenston generators have a total maximum capacity of 525,000 horsepower.







UPPER LEFT—Tall tales were being told when this photograph was taken. Group includes H. E. Harrison, Toronto, J. W. Young, H.E.P.C., J. H. Gibbon, Belleville, E. G. Bainbridge and R. C. Loucks, Ottawa, M. W. Rogers, Carleton Place and E. G. Gurnett, East Central Region.

UPPER RIGHT—J. G. Baldwin, Lindsay Hydro-Electric Commission, provides a light to help brother, Henry F. Baldwin, Oshawa Public Utilities Commission get up steam during sessions of the Eastern Ontario Municipal Electrical Association held in Ottawa this year during October.

CENTRE LEFT During the deliberations of the E.O.M.E.A. in October, Richard L. Hearn, left, and Stanley W. Canniff, General Manager and Chief Engineer, H.E.P.C. and Ottawa Hydro-Electric Commission respectively, were found chatting in one corner of Chateau Laurier, Ottawa.

LOWER LEFT—Convention agenda engages the attention of the group in this photograph which includes, left to right, Frank H. Plant, Ottawa, President of the E.O.M.E.A., George E. Findlay, Carleton Place, Harry Foy and George F. Hutcheson, Huntsville, President of the O.M.E.A.

LOWER RIGHT—Something of importance was being discussed when the Hydro News' photographer snapped this group, if the serious expressions are a reliable indication. This trio includes, left to right, E. S. Frost, H.E.P.C., James Harris, Kingston, as well as F. C. Adsett, H.E.P.C.





CAPITAL CONVENTION

(Continued from page 15)

and including 1952." However, in order to protect Ontario consumers during 1953 and subsequent years, and to build up a surplus of power for the encouragement of industry, the construction of additional generating facilities must be commenced during 1950.

In touching upon this subject, Mr. Saunders stated that the immediate problem was to obtain permission to proceed with facilities which would give more efficient use of the present diversions from the Niagara River.

In concluding, the Chairman also assured his listeners that the Commission was pressing forward negotiations prior to construction at the site of the proposed St. Lawrence Development from which it would be possible to obtain an additional 1,100,000 horsepower of electrical energy.

Sessions of the 15th annual convention were presided over by E.O.M.E.A. President Frank H. Plant, Ottawa, while greetings were extended by Acting Mayor, Controller Leonard Coulter, of Ottawa. During his remarks, Controller Coulter alluded to the significance of this meeting in Ottawa where negotiations were being concluded for the acquisition of the assets of the Ottawa Light, Heat and Power Company by the Ottawa Hydro-Electric Commission. In this connection, the speaker praised the efforts of Chairman Frank H. Plant and General Manager S. W. Canniff of the local commission.

"I am confident that the consolidation of these two great systems will work for the benefit of the citizens of Ottawa," he added.

Reviews Progress

Another highlight of the annual convention was the address by Richard L. Hearn, General Manager and Chief Engineer, H.E.P.C., who gave a review of the Commission's progress during the past year.

In order to provide a background for this report, Mr. Hearn gave a brief resumé of Hydro activities and accomplishments from 1945. Referring to new sources of power placed in operation since the end of hostilities, the speaker said, 240,000 horsepower had been added to the Commission's resources throughout Ontario in these four years.

In Southern Ontario, 1,286 route-miles of transmission line were placed in operation while in the Thunder Bay System 91 miles were added and 874 miles in the Northern Ontario Properties.

In respect to transformer capacity, the General Manager reported that 125 new substations were put into operation with an installed capacity of approximately 390,000 kva. while the capacity of 116 substations was increased to provide a total capacity of 690,000 kva.

Emergency Power

This year, the Commission undertook the installation of emergency steam generating units at various strategic points in Southern Ontario, the speaker continued.

"These steam units will furnish the Commission with an additional 60,000 to 70,000 kilowatts, independent of stream conditions and will help materially to avoid interruptions such as occurred last year," the General Manager declared.

Mr. Hearn also mentioned arrangements which had been made with Canadian Niagara Power Company to secure an additional 22,000 kilowatts (29,000 hp.) during the winter months.

In referring to the additional 2,500 cfs. of water which would be available at the DeCew Falls plant after the close of navigation in the Welland Canal, the speaker declared: "While it will not increase the peak capacity, it will increase the kilowatthours which will be of considerable help in operating in conjunction with the Ottawa storages."

Turning to hydraulic developments now

(Continued on page 28)

U.K. ELECTRICAL EXPORTS STANDARDS MISSION VISITS CANADA



MATTERS OF common interest in connection with the approval of British Electrical equipment for sale in Canada were discussed by representatives of the Canadian Standards Association and of the visiting United Kingdom Electrical Exports Standards Mission to Canada, recently. This photograph was taken during a conference held in the Board Room of The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto. Those in the group are, back row, from left to right, G. B. Tebo, Hydro Research Division, H.E.P.C.; G. E. Kewin, Electrical Engineering Department, H.E.P.C.; A. W. Manby, Assistant General Manager — Administration, H.E.P.C.; R. B. Young, Assistant Director of Research, H.E.P.C.; W. P. Dobson, Director of Research, H.E.P.C.; T. M. H. Stubbs, Chief of the Standards and Research Department of B.E.A.M.A.; R. L. Hearn, General Manager and Chief Engineer, H.E.P.C.; Dr. O. Holden, Assistant General Manager — Engineering, H.E.P.C.; T. S. Carter, Chairman of the Electrical Committee, Rubber Cable Makers' Association; H. W. Beck, Director of Supply, H.E.P.C. and J. F. Stanley, Electrical Technical Director of B.S.I. Front row, from left to right, W. L. Sims, Director, Watkin Ltd., and Chairman, Electrical Committee, M.T.T.A.; J. O. Knowles, Managing Director, Brookhurst Ltd.; W. Ross Strike, K.C., Second Vice-Chairman, H.E.P.C.; Robert H. Saunders, Chairman, H.E.P.C.; Hon. G. H. Challies, First Vice-Chairman, H.E.P.C.; D. Maxwell Buist, Export Director of B.E.A.M.A. and Chairman of the Electrical Industry Exports Group and Sir Holland Goddard, Past President, M.T.T.A. and Chairman of the Canadian Exhibition Committee for the British Tool, Machine Tool and Scientific Instruction Section, Canadian International Trade Fair, Toronto, 1950.

GETTING THE ANSWERS

(Continued from page 18)

engineers at a dinner held in honor of the overseas visitors.

Chairman Saunders told the visitors that it was an honor and privilege to welcome such a distinguished group of electric industry men. He described briefly the tremendous expansion program upon which the Ontario Hydro has embarked and expressed the hope that the visit of the Britons to the largest of the Commission's 57 generating stations had been informative and profitable.

Tribute to Hydro Engineers

Mayor Houck expressed his admiration for the Chairman of Hydro who, he declared, was doing a splendid job. The mayor told the visitors that Hydro has the finest engineers to be found anywhere in the world and the most capable administrative officers.

R. B. Richardson, leader of the British distribution team, revealed that the Britons wanted a first-hand look at how the North American power industry works from the technical side, and to find out in which ways it may be working better than the British system. William Tulip, who heads the generation team said: "We want to determine in what way the North American power industry is doing better than ours. Also, if by chance we find out that we are using certain methods which are better, we'd be glad to explain them."

Most of the team members have some specialized interest to check in their inspection tour on this side of the Atlantic. For example, Roger Mallet, Assistant Chief Engineer of the Midlands Electricity Board, wants to learn something about North American methods of building transmission lines, particularly in rural areas.

Other team members are primarily interested in big city power problems. Herbert Petch, meter tester of the London Electricity Board, wants to meet his "opposite number" in the North American power industry and see how he operates.

Both teams have comprehensive plans for their survey. Team No. 1 will inspect methods of generation and transmission of power. This will include layout and design of power stations, plant maintenance, fuel handling, boiler practices, construction of overhead and underground transmission lines, substation equipment and operational techniques and manpower employed in stations similar to those in Britain.

Team No. 2 will look into the design, erection and maintenance of overhead and underground power lines, rural power supplies, wiring systems in homes and buildings, electricity rates, the relationships between public power projects and private companies, consumer research, public relations, accountancy and other office procedures.

Labor relations also will be an important topic of the six-week survey. Team members will pay particular attention to joint negotiating machinery and methods of wage payments. They will want to learn the extent of joint consultation between workers and management in industry. Welfare programs, education and training also will come up for inquiry.

To Visit T.V.A.

The British teams intend to visit public and private power projects in the United States, and most of the team members were keenly interested in inspecting the big Tennessee Valley Authority. Their tour will take them through the north, east, southern and middle sections of the U.S.

Present at the international gathering of distinguished engineers and power officials at the Cataract City were the following U.S. power leaders and Hydro engineers and officers:

H. R. Waldron, Vice-President of Buffalo Niagara Power Company; Walter Cissler, Executive Vice-President of the Detroit Edison Company; Dr. Norman Gibson, Director of Niagara Falls Power Company and consultant for several U.S. power firms; Col. Kelly, former President of Buffalo-Niagara Electric Company; C. A. Clancy, Vice-President and General Manager of Canadian Niagara Power Company; E. S. Bundy, Chief Engineer of Niagara-Hudson Power Company; Howard Harrington, Load Supervisor of Buffalo-Niagara Power Company, and the following Hydro officials, R. L. Hearn, General Manager and Chief Engineer; Dr. Otto Holden, Assistant General Manager—Engineering; A. W. Manby, Assistant General Manager — Administration; E. B. Easson, Commission Secretary; H. D. Rothwell, Administrative Assistant —Regions; Gordon Kribs, Power Controller; David Forgan, Director of Construction; H. H. Leeming, Director of Frequency Conversion; W. P. Dobson, Director of Research; J. M. Hambley, Director of Operations; H. J. Sissons; Executive Assistant to General Manager; S. L. Fear, Thermal Generation Engineer; A. S. Robertson, Niagara Regional Manager; Dan Flannery, Niagara Regional Consumers Service Engineer; J. A. Blay, Manager of Promotion and T. E. Dietrich, Field Staff Supervisor.

Surprise Presentation



BIRTHDAY GREETINGS are extended by Richard L. Hearn, Hydro's General Manager and Chief Engineer, to Dr. Otto Holden, Assistant General Manager—Engineering.

PLAN SURVEY AT EXETER

Inventory operations preparatory to conversion of Exeter and district are scheduled to take place next August and September, Hydro Manager Kenneth Lampman of the local P.U.C., reported recently. A survey of power consumers' electrical equipment will take place this fall and winter prior to district change-

CONSOLIDATE OFFICES

All Ontario Hydro offices in Sudbury were consolidated in one building owned by the Commission recently. Sudbury offices of the Operations Division were moved to the new location on the second floor of the Larch Street building which was completed during the summer. The first floor has been occupied by the Sudbury Rural Area Office since the building was erected three years ago.

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



Courtesy—Swift Canadian Co.

What do apples mean to you? To some, they mean pie with tender golden crust. To others, they denote dumplings with jelly, or sauce and thick cream. To many, they signify cold, juicy crunchiness to bite into at any time of day. Apples are something like potatoes in that certain varieties are better for mashing or sauce, and others best for baking. Favourite baking varieties: Alexander Wolf River, Jonathan, Northern Spy. Apples for pie, sauce, pudding are Snow, Gravenstein, Wealthy, Greening and Wagener. Coddled apples are made from Tolman Sweets and Spitzenburg. Most people know their favourite eating apple.

* * *

Eating apples are best for salads; here are some combinations worth reviewing: (1) Combine diced apple with orange sections and onion rings. Marinate in French dressing. (2) Mix diced apple with shredded cabbage, pineapple, and diced bananas and boiled dressing. (3) Use equal parts diced apple and grated raw carrot with apricot nectar, and sprinkle with nuts.

* * *

It's no secret that Christmas shopping is being accomplished well in advance this year. Christmas baking might well be prepared now, too—the fruit cake, steamed pudding, mincemeat, cranberry relish and shortbread. Store everything in a cool, dry place.

* * *

A raisin and cranberry pie with its contrasting sweet and tart flavour is a very timely dessert. Use equal parts of both fruits. Cook them with sugar, water and cornstarch a few minutes before pouring into a pastry-lined pie pan. Cover with top pastry and bake in a very hot oven.

* * *

Treat your family to an old-fashioned apple cobbler. To make it, slice apples into a greased casserole to a depth of three inches. Stir in ¼ cup brown sugar, and a teaspoon of cornstarch. Top it with some of your best, rich drop-biscuit dough and bake in a hot oven for half an hour. Serve warm with cream.

* * *

Just a reminder that prunes no longer need to be soaked before cooking. Simply cover them with water and place in the electric oven for one hour after a cake-baking period and the heat has been turned off. The stored heat will cook them.

* * *

The easy way to steam puddings is to use your large roast pan. Place a roasting rack in the bottom of roaster (pie plates will do) to keep puddings from resting on bottom of pan, fill roaster with enough boiling water to cover two-thirds of the molds and cover with a tight-fitting lid. Steam a recipe for 12 servings for four hours. Then remove, cool and store, wrapped in wax paper.

* * *

When you're ready to reheat plum pudding for your wonderful dinner, heat in the same fashion in which you steamed pudding in the first place for one hour.

* * *

Don't be as forgetful as yours truly! As moving day nears, write down the last minute reminder such as pay paper boy, remove soap dishes, collect lamp bulbs, request change of address cards for post office, milk company, etc.

* * *

Flowers look more attractive in a vase that conceals the stems. In clear glass you might add a little green vegetable colouring—or if you like, blue or orange.

* * *

Pumpkin dish variations are almost a complete food story. Take pumpkin pie for example: You can use the following flavourings — brown sugar, molasses, honey, or maple sugar as part sweetening. Spice with cinnamon, ginger, cloves, nutmeg, allspice or a combination of these. Vary, with grated orange rind or lemon peel, or with a teaspoon of vanilla, rum extract or almond flavouring.

The potato is the favourite of the vegetable crop. Everyone likes them, even those on a low-starch diet — and these can be eaten on the "slim" menu if other starchy foods are eliminated. Ways to vary our usual mashed potato are: (1) Cook an onion with the potatoes, remove onion before mashing. (2) Sprinkle ½ tsp. celery seed and mash. (3) Add ½ cup top milk and sieved cooked egg to one quart potatoes and mash. (4) Sprinkle with cheese and mash.

* * *

Since I have been using the electric mixer for sponge cakes, the result is more cake as it comes from the oven, but it shrinks on cooling. However, we have a new method for cooling tube cakes: Place the tube cake on the neck of a funnel or bottle. When cold, remove from the pan.

* * *

Acorn squash, known as Danish or Table Queen, has much the same flavour as the hard shelled varieties but has the advantage that you do not need a cleaver to cut it. This small squash may be cooked whole in the pressure cooker — or cut in half, cleaned and baked. The halves should be turned cut-side down to bake for one hour, then turn, sprinkle with salt and brown sugar, and bake for half hour.

* * *

For a quick dessert that is different, substitute cranberry juice for all the milk listed on the packaged tapioca pudding mix.

* * *

Spread thick cranberry filling between and on top of two layers of white cake, cool, then add swirls of frosting and you have a red and white picture cake. Serve it the day it is made.

* * *

Cranberry filling: Mix ½ cup sugar with four tablespoons cornstarch and salt. Add slowly to 1½ cups hot cranberry juice and ¼ cup orange juice. Cook over low heat until clear. Cool.

NOT "OUT OF THE WOODS"

(Continued from page 11)

the timing of the frequency conversion program. Engineering and economic factors alone, he said, determined the order in which the municipalities in the 25-cycle areas of Southern Ontario were to be changed over to 60-cycle frequency. If, however, any 25-cycle municipality were called upon, prior to its conversion date, to supply 60-cycle power for a new industry or expansion of existing industry, the matter should be referred to the Commission, he emphasized. No municipality, he said, need be too fearful in regard to taking on new industries. Hydro, the Chairman stated, had not played any favourites in the preparation of the frequency conversion schedule. The decisions had been made on the basis of doing the job at the lowest possible cost, consistent with sound engineering principles. It was only natural, he said, that some municipalities might wonder why they had to wait a few years for 60-cycle power instead of being changed over immediately.

Not "Out Of The Woods"

A. W. Manby, Assistant General Manager — Administration, said he did not want the delegates to go away with the idea that "we are out of the woods, with regard to the power situation." He strongly emphasized the necessity of strict compliance with power regulations. The regulations were not so drastic as to work any hardship on anyone, but simply to insure against the possibility of cut-offs this fall and winter. In the first place, he reiterated, the restrictions were necessary because of the cuts on the Commission's direct customers which had resulted in a curtailment of production to the point where men were being laid off. For that reason, the Commission felt obliged to take steps to keep those plants from serious shut-down. These cuts at the present time, the Assistant General Manager said, were running from 800,000 to 1,500,000 kilowatt-hours a day. This year, he continued, the load was down and the cuts were down, but the percentage of cut-offs compared with last year. There was another thing — the very fact that those loads were down did not give the Commission the same cushion as last year. It was pointed out that last year the cuts sometimes went up to over 2,000,000 kilowatt-hours a day. This was taken care of by allocation and restrictions and by power cut-offs in case of direct customers.

In discussing the frequency conversion program, M. J. McHenry, Director of Consumer Service Division, said that some time ago test runs had been made in the East York area. At that time, the procedures were checked very carefully and it was found that the methods that had been devised worked exceedingly well, and so the conversion from 25- to 60-cycle was proceeding with excellent results.

Co-operation Essential

Mr. McHenry pointed out the value of the regional offices to the municipal systems. These offices had been established, he said, to deal with day-to-day problems in a quick, efficient manner and the regional personnel were ready to co-operate in every way possible. However, he emphasized, the maximum benefit could be obtained only when the municipalities, themselves, co-operated to the fullest possible extent.

During the afternoon session four proposals were submitted with respect to employing an O.M.E.A. secretary or manager. After considerable discussion a motion was passed to the effect that Proposal No. 2 be forwarded to the O.M.E.A. executive to be further dealt with at the joint annual meeting next February. Proposal No. 2 reads as follows:

"That we engage the services of a full-time secretary-treasurer with an estimated budget of $15,000 a year."

Another resolution that was passed at the meeting was:

"Resolved that the Ontario Municipal Electric Association request the H.E.P.C. of Ontario:

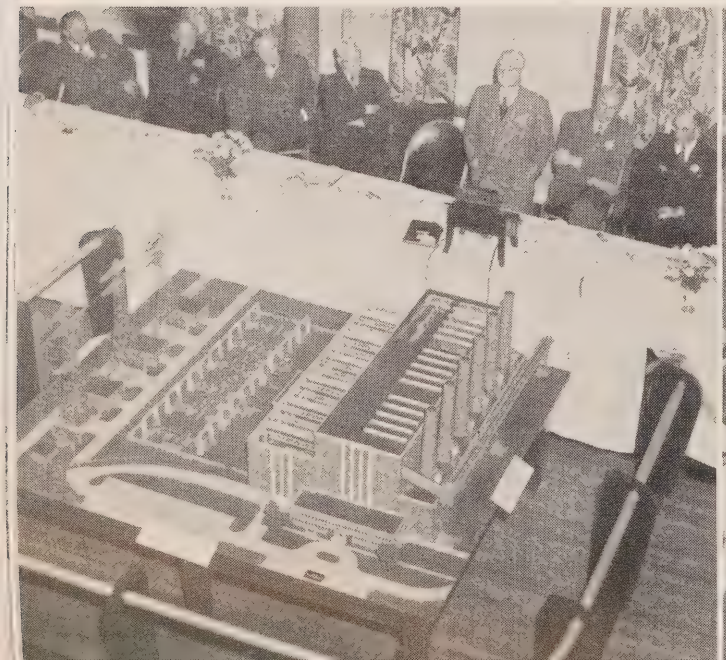
1. To set up standards for municipal electric distribution systems in consultation with the executive of the O.M.E.A. and the A.M.E.U. or a committee set up by these Associations for that purpose;
2. To make a periodic inspection of each municipal distribution system upon request;
3. To send a report of such inspection to the municipal commission concerned for its information."

Dr. J. A. Boyd, a dentist from Stratford, was the guest speaker at the evening din-

(Continued on page 30)

STEAM STATION MODEL ON DISPLAY

TABLE MODEL of the projected Toronto Steam Generating Station was on hand to illustrate the speech given recently to the Electric Club of Toronto by R. L. Hearn, Hydro's General Manager and Chief Engineer. At left, Mr. Hearn addresses club members on the station, which is expected to commence initial delivery of power in fall of 1951. At right, members examine model as explained by steam engineer S. L. Fear.





Annual Meeting

District No. 6 O.M.E.A.



O.M.E.A. DISTRICT No. 6 committee for the ensuing year, is front row, left to right: G. W. Gordon, Kitchener; J. W. Monteith, (President,) Stratford; C. K. Merner, New Hamburg; A. E. MacIntyre, Stratford. Back row, left to right: Dr. H. A. Mutton, Mitchell; P. E. Welker, St. Jacobs; J. H. Francis, Tavistock; H. O. Hawke, Galt; and F. O. Pelz, Preston.

S. KATHLEEN Kestell, (right) Secretary-Treasurer O.M.E.A., shares a table with Dublin delegates, T. J. Molyneaux, Secretary-Treasurer; Mrs. Molyneaux; Mrs. M. Looby, Trustee, Mrs. Curtain and William Curtain.



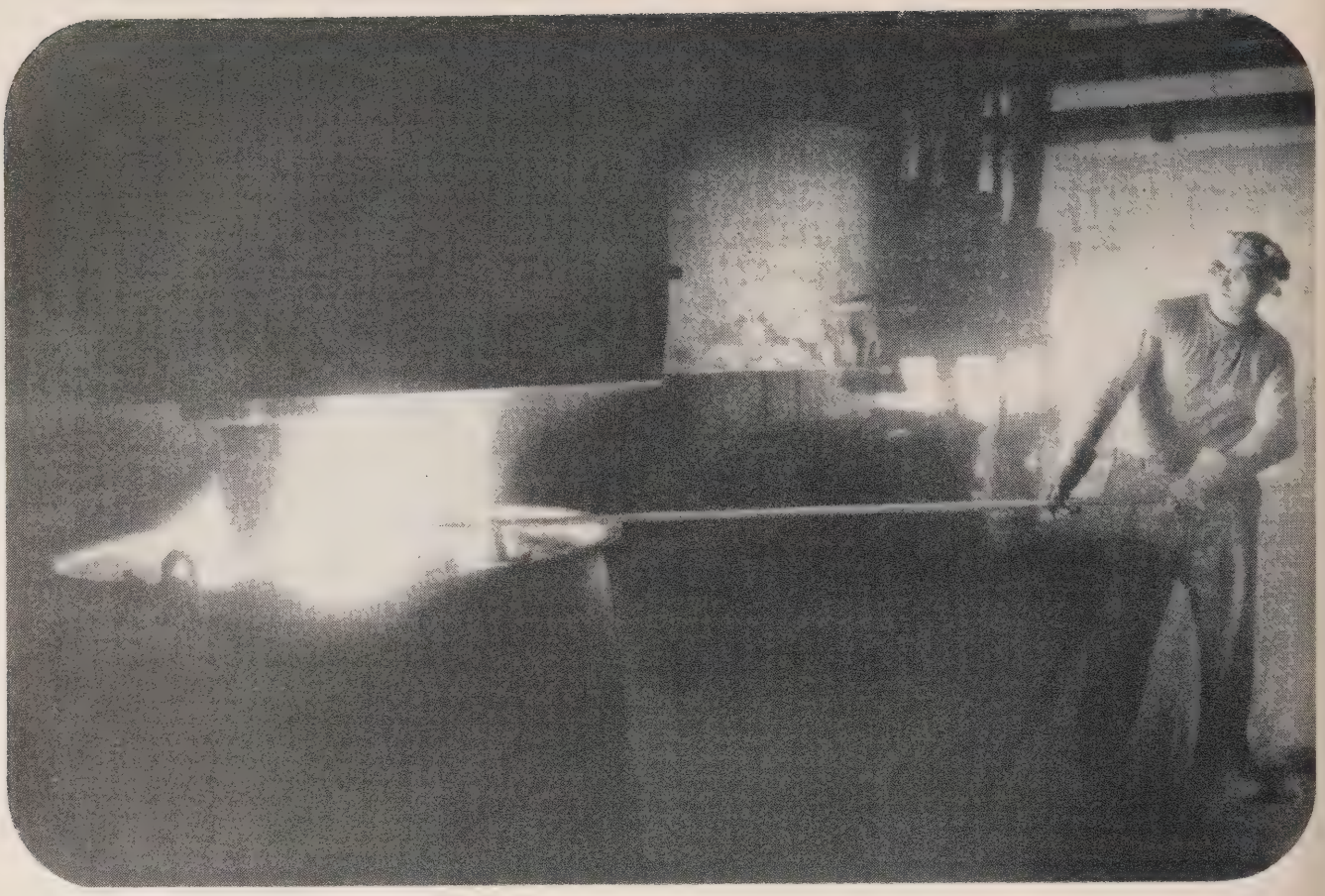
APPING STORIES no doubt! Starting from the left we e Loftus H. Reid, Chairman; D. G. Moffitt, Executive Assistant; R. W. Hibbert, all of the Toronto Hydro-Electric System; and George F. Hutcheson, Huntsville.



H. GROUP comprises W. Gleiser, W. Henderson Waterloo; G. C. Hamilton; E. and W. G. Woods.



LUNCHEON SPEAKER Hydro Chairman Robert H. Saunders (right) shakes hands with J. Fred Edward of Perth.



"ALUNDUM" FURNACE in operation at the abrasive plant of the Norton Company at Chippawa, near Niagara Falls.

Alundum

HYDRO ON THE JOB IN ABRASIVE PLANT

TWO world wars and an industrial boom have accelerated the demand for abrasives around the globe. These have been important factors in contributing to the expansion and growth of the Norton Company which claims to have the largest crude abrasive plant in the world. This plant is located in the Village of Chippawa, two miles above the famous falls of Niagara.

Electric power plays a vital part in the production of abrasives. It was natural, therefore, that the Niagara area, a centre of electric power, should have been selected in 1910 as the locale for the first units of this company's big industrial plant.

In those early days, the original plant employed the services of twenty-four men and produced nearly four tons per day of the abrasive "silicon carbide." By contrast, today the big factory employs approximately 800 persons, and the output of crude abrasives has been stepped up greatly.

The Norton Company ranks as one of Hydro's biggest consumers in the Niagara Region. The large electric furnaces consume approximately 40,000 kilowatts (55,000 hp) of electrical energy. At the peak, when an all-out effort was being made during World War 2, the plant employed up to twelve hundred persons and used 52,500 kilowatts (70,000 hp).

First step in the expansion of the Norton Company plant at Chippawa came during World War 1. Additional buildings were constructed for the production of "Alundum" made by the fusing of bauxite ore in an electric arc furnace. Further expansion occurred in 1930, when the company ceased operating its plant in Niagara Falls, New York, and concentrated the manufacture of crude abrasives in Chippawa. During World War 2, the mechanization of the armed forces created an even greater demand for abrasives and the facilities of the Chippawa plant were further expanded and production was accelerated.

To meet the specific requirements of industry, constant improvement of abrasives is necessary, company officials pointed out. Consequently the development and improvement of the product is supervised by a competent staff of research engineers who are provided with an ultra-modern research laboratory building fitted with the latest and finest research equipment. In the continuous search for improvement many new types of abrasive products have been discovered and developed.

Large stockpiles of basic materials, silica sand, petroleum coke and bauxite ore are maintained at the Chippawa plant. Some of these materials are imported from distant lands. Bauxite ore, for example, comes from the Guianas in South America. Bauxite is the raw material for manufacturing "Alundum" (fused aluminous oxide.)

Today, the abrasives produced by the Norton Company are helping to play an important part in the industrial growth of Canada, and to aid the industrial recovery of nations around the world.

by

C. G. W. MacIntosh
Hydro News

Power Situation Brighter This Year, But—

Still "Nip and Tuck"

Possible Easement Of Hydro Restrictions Before Christmas Forecast By Chairman

by
Boyd L. Graham
Hydro News

POSSIBILITY of an easement in Hydro restrictions before Christmas this year was forecast recently by Hydro Chairman Robert H. Saunders.

Mr. Saunders' prediction was made during a luncheon address to delegates attending the convention of District No. 8, O.M.E.A., at the Elmwood Hotel, Windsor, on October 27.

During this one-day meeting, under the chairmanship of President Warren F. Bolton, of Windsor, over 60 delegates from the counties of Essex, Kent and Lambton, heard addresses by Commission representatives on various aspects of Hydro, including the power situation, expenditures, and frequency conversion.

Introduced by Gordon Fuller, Chairman of Windsor P.U.C., Mr. Saunders stressed the wisdom of giving consumers "all the facts" about the power situation as an effective means of enlisting their co-operation in saving power. He declared that conditions this year were better than one year ago. He pointed out that water flow past Hydro plants was greater this year than last, quoting figures to support his statement.

However, the situation was still "nip and tuck" Mr. Saunders continued, emphasizing the vital necessity for continued power conservation during the ensuing weeks.

The Chairman referred to the fact that the Commission had sustained a reduction in power deliveries from the Mac laren-Quebec Power Company amounting to 3,385,000 kilowatt-hours a week.

He also expressed his regret that it had been necessary to cut off water heaters four hours each day. This restriction was designed to effect a daily saving of approximately 40,000 horsepower on peak, the speaker pointed out.

Turning to the brighter side of the picture, he told his audience that the Commission had succeeded in tapping new sources of supply this year.

"Given normal water conditions from now on, we believe we will be able to carry on without imposing further restrictions," the Chairman declared.

Paying tribute to the manner in which merchants and other retailers had accepted lighting restrictions, Mr. Saunders reiterated his plea for continued voluntary conservation until the second week of December.

"Provided we have normal water conditions and continued co-operation in saving power until then, we are hopeful that we will be able to ease the restrictions somewhat in time for the Christmas shopping season," he stated.

At another point, the Chairman remarked: "Many of us are inclined to overlook the vast sums necessary to get the power to consumers after it has been generated," Mr. Saunders pointed out.

For example, approximately $177,000,000 of the Commission's $580,000,000 construction program was being provided for transformation and transmission facilities.

Another example of this was the fact that the Commission's Property Department had made 1,056 settlements in 1945 for new land in connection with the building of new transmission lines and

Continued on page 28



THIS GROUP of delegates was photographed while attending the convention of District No. 8, O.M.E.A. in Windsor recently They are, left to right, E. C. Morand, Tecumseh, Earl Gillis, Belle River, L. G. Girard, St. Clair Beach, Thomas Leblanc, Belle River and Thomas Cada, Vice-President, also of St. Clair Beach. Over 60 delegates attended the meeting.

CAPITAL CONVENTION

(Continued from page 21)

under construction, Mr. Hearn reviewed progress at the three Ottawa River projects, Des Joachims, Chenaux and LaCave. He also mentioned work on the transmission lines and substations to carry the power from these new generating sources into the system "which is keeping pace with the schedule set for the generating stations."

With approximately 422,000 kilowatts or 565,000 horsepower of new energy available for Southern Ontario in the latter part of 1950 and the early part of 1951, the Commission should be able to emerge from the difficult position it has been in for the last years, the General Manager continued.

No Surplus Power

"While we will not have any surplus or standby power, we will, at least, have the opportunity of avoiding restrictions, providing no major breakdown occurs in any of the main generating stations," he added.

Dealing with requirements after 1952, Mr. Hearn stated that this matter was under study and would require at least a year to finally crystallize any plans for new generation after the end of 1952.

"Many factors involved in this study are dependent on what decision is made regarding the development of the St. Lawrence River during the coming year," he added.

But, the problem of future power supplies was of very vital interest to the Commission, the speaker reiterated. For example, the Generation Department of the Commission has been securing field data on the following sites: White River (north shore of Lake Superior); Manitou Chute (English River); Carlow Storage (Madawaska River); Aubrey Falls (Mississagi River); Little Abitibi diversion and the new development at Niagara Falls.

Capital Expenditure

Dealing with the capital expenditures of the Commission for the fiscal year 1948-49, the General Manager voiced the prediction that 95 percent of the budget total, $144,500,000, would be expended.

"In fact, this is the first year that the supply of materials and labour has enabled the Commission to almost complete the work set out in the budget," he stated.

Concluding, he declared: "At the present time, indications for the next year are that we will be able to maintain this pace that has now been set and there is every reason to believe that our budget will be somewhat higher in the fiscal year 1949-1950."

In a resolution passed during the morning session, the delegates expressed their opposition to consumers in 60-cycle areas paying "toward the cost of converting municipally and privately owned equipment in 25-cycle areas."

Delegates re-elected last year's executive for 1949-1950. The re-elected officers are: President, Frank H. Plant, Ottawa; Vice-Presidents, H. B. Tully, Picton, and S. J. Babe, Oshawa; Secretary-Treasurer, Stanley W. Canniff, Ottawa; Directors, Gordon S. Matthews, Peterborough, M. J. Elliot, Bowmanville and Dr. R. A. Patterson, Kemptville; O.M.E.A. Executive representatives, George E. Findlay, Carleton Place, and James Harris, Kingston.

Concluding feature of the convention was a sight-seeing tour by bus through the Gatineau hills, which proved equally as popular as the annual tournament at the Rivermead Golf Club on the opening day.

RECENTLY RETIRED

ABRAHAM MARTIN BOWMAN retired recently after serving for over 30 years as Manager and Superintendent of the Elmira Public Utilities Commission.

Since his retirement, however, he has set up a meter room and is repairing kilowatt-hour meters for a number of the H.E.P.C. rural operating areas and adjacent municipalities.

Mr. Bowman is both an electrical and civil engineer and is a member of the Association of Professional Engineers. He has also won the distinguished service award of the Canadian branch of the American Waterworks Association.

STILL "NIP AND TUCK"

(Continued from page 27)

other distribution facilities. So far this year, there have been 26,826 such settlements, he added.

W. Ross Strike, K.C.

W. Ross Strike, K.C., Second Vice-Chairman of the Commission introduced by J. Clark Keith, General Manager of Windsor P.U.C. and President of the A.M.E.U., gave a resumé of Hydro expenditures in connection with its postwar construction program.

Citing figures to illustrate his remarks, the speaker pointed out that scarcity of materials and labour had hindered the Commission in attaining its annual objectives. Only this year had the supply situation become noticeably better, permitting Hydro to come closer to the goal it had set for the year.

However, the Commission faces the future with confidence, Mr. Strike continued.

"In Ontario, our whole economy is based on electrical energy," he stated "We believe that our expenditures are justified and that when the program is completed there will be a demand for the power."

In concluding, the speaker urged members of the O.M.E.A. to keep their organization strong with the function of

(Continued on page 30)



LIGHTING FIRE in steam generator of Hamilton G.S. is Miss Edith Kent, of the staff of Hydro News. With a capacity of 10,00 kw (13,500 hp), the station is one of the first of Hydro's emergency steam stations to go into operation this fall. It will deliver power at 66⅔ cycles until frequency changeover in Hamilton is sufficiently advanced to warrant 60 cycle operation. Watching "Operation Torch" are, l. to r., Guy Parker, W. J. Jackson and R. M. McKenzie, all of West Central Region; R. A. Hanright, consulting engineer for steam stations; S. L. Fear, liaison engineer for steam stations; Dr. G. F. Clark, assistant to Mr. Hanright.

Windsor
onvention



LEFT—IN this corner, introducing H. H. Pegg, Windsor R.O.A., W. A. Shaw, Windsor, Del Quick and E. Foreman, Kingsville, W. Callery, of Windsor, and Chairman Robert Saunders.



RIGHT—J. J. Cleaver, Area Inspector, Windsor, and M. J. McHenry, Director of Consumer Service, H.E.P.C., were evidently enjoying themselves.









PPER LEFT—Fred Hubbell, f Windsor, and Harry Foy nown "checking in" at istrict No. 8 O.M.E.A. eeting held in Windsor.

OWER LEFT—Two Chatham elegates, Stanley Thomn and R. S. Reynolds get eir registration buttons om J. G. Abbott, Windsor.

ABOVE — ELMER Sherman, Kingsville and C. L. McMann, Sarnia, were sorry agenda did not include this entertainment

LEFT—HOWEVER, this trio, including, W. L. Wilson, Tilbury, Leo Sylvestre, Belle River, and R. J. Cooke, Tilbury seem pleased with proceedings.

EDITORIAL IMPRESSIONS

(Continued from page 12)

means less spectacular, impression of the mighty project. Briefed beforehand by the guide, they viewed construction on the main dam and powerhouse, and were taken through the concrete mixing plant. A short ride to the McConnell Lake control dam showed the group the river diverted through sluiceways and proceeding through a specially dredged channel to follow its original course below the powerhouse site.

Although engineering facts and figures were of primary interest, other features of the Commission's construction projects also claimed the attention of the visitors. A variety of questions was asked concerning housing, hospital and cafeteria facilities and recreation activities, and the editors declared they were very favourably impressed with the way Hydro provides for the comfort and happiness of its employees.

Placing of Draft Tubes

On the third day of the trip, the party visited its third construction project, Chenaux, and the completed development of Stewartville, which was placed in operation in 1948. At Chenaux, they watched the placing of draft tubes for the powerhouse, drove across the top of the Limerick Island control dam, and viewed construction going forward at the Portage du Fort dam, at the Quebec channel.

Great interest was shown in the workings of a power plant, as demonstrated at Stewartville. The editors watched the generators in action, studied the intricacies of the switching and transformer facilities, and viewed the whole development from the top of the dam. In addition, they visited the control room, where details of transmission and distribution of electricity were explained.

Comments on the trip were many and varied, but all complimentary. The editors agreed that, as a result of the tour, they had gained a clearer understanding of Hydro and its problems, and a greater degree of insight into the way in which Hydro power affects the industrial and economic life of the province.

NOT "OUT OF THE WOODS"

(Continued from page 24)

ner. The title of his address was "Hooey and Humbug," and was based on the story, "One Hundred Million Guinea Pigs," by Arthur Kallett and F. J. Schlink.

The following executive for District No. 6 was elected for the ensuing year: President: J. W. Montieth, Stratford; Vice-President: C. K. Merner, New Hamburg; Directors: G. W. Gordon, Kitchener; Fred Pelz, Preston; Harvey Hawke, Galt; Dr. H. A. Mutton, Mitchell; J. H. Francis, Tavistock; P. E. Welker, St. Jacobs; Secretary-Treasurer: A. E. McIntyre, Stratford.

PROGRESS AT KINGSTON

Since August, 1948, 113 miles of Hydro lines have been built in Kingston rural area and 670 consumers added to new and existing lines, W. J. Montgomery, Area Manager, stated recently. This is part of a new record in the Province's rural electrification program which has already passed the halfway mark.

GREATER EXPANSION

(Continued from page 9)

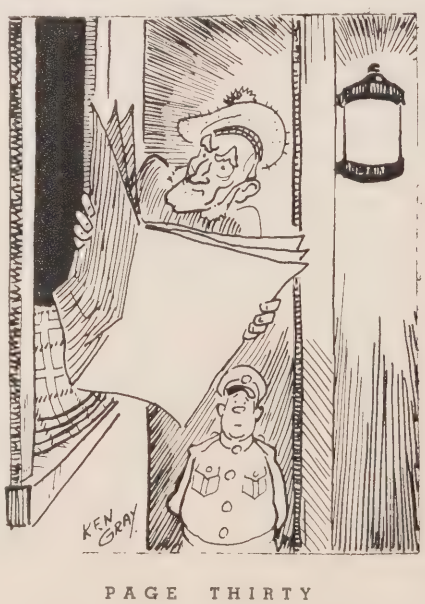
various municipalities could be taken care of at a minimum cost in the conversion from 25 to 60 cycle power. The meter pool scheme was devised by the Commission's frequency conversion group. The speaker said that some meters would be obsolete and others of a type which would be economically unsound to convert. But in the majority of cases, he said, the meters could be converted and these would be done at pool cost, irrespective of the meter.

The speaker said that Hydro conversion engineers have devised a plan for converting meters and could do it economically. A flat rate for conversion of 25-cycle meters would be established and a trained staff would convert the meters, test them, etc.

Meters, he said, that were obsolete or could not readily be converted would be used for 25-cycle extension areas until converted to 60 cycle.

Following the annual dinner, short addresses were given by Hydro Chairman Robert H. Saunders, and Guy Marsden, County Engineer of Norfolk County.

Mr. Saunders referred to the difficult power conditions of a year ago and drew a parallel with conditions this fall. He discussed the water supply situation and reported that at Queenston Generating Station on the Niagara River, the Commission had been losing some 400,000 kilowatt-hours a day this fall largely because of the low level of Lake Erie.



Chairman Saunders said the Commission appreciated the co-operation that had been received from the people of District No. 5 in conserving electric power. He emphasized that it was imperative to follow the restriction regulations rigidly and urged still further conservation of power on a voluntary basis.

Hydro, the Chairman said, would not hide the facts about the power situation. In turn, he urged the wholehearted co-operation of all classes of consumers until the present emergency is safely passed.

The brief, informative address given by Guy Marsden focused attention on road work and early history of Norfolk County.

D. P. Cliff, of Dundas, was elected President of District No. 5, succeeding Roy Pierson, of Brantford Township, who was elected Vice-President. Keith C. MacLeod of Stamford Township, was the other Vice-President elected, for the district.

Directors elected were the same as last year—Mayor Lewis W. McConkey, of Niagara-on-the-Lake, Thomas Barnes of Niagara Falls, W. Waterson of Welland, and K. V. Bunnell of Brantford.

Welland was selected as the locale for the spring meeting and Dundas was chosen for the fall convention and annual meeting. Three new members to the growing No. 5 District were announced—the Commissions of Smithville, Dunnville and Stoney Creek.

After considerable discussion it was decided that District No. 5 would recommend to the O.M.E.A. executive that a part-time secretary-treasurer be employed for the association.

STILL "NIP AND TUCK"

(Continued from page 28)

keeping alive a spirit of co-operation between the Commission and the municipalities as one of their chief objectives.

Frequency Conversion Program

The afternoon session was featured by a panel discussion on the Frequency Conversion program with three Commission representatives: A. W. Manby, Assistant General Manager — Administration; Harry H. Leeming, Director of Frequency Conversion and M. J. McHenry, Director of Consumer Service, as speakers.

During a business period at the conclusion of this panel discussion, delegates turned down a proposal that "The Ontario Municipal Electric Association request the H.E.P.C. to set up standards for municipal electric distribution systems in consultation with the executive of the O.M.E.A. and the A.M.E.U. or a committee set up by these associations."

NO SMOKE NUISANCE

Modern Equipment To Be Installed In The Toronto Steam Generating Station Will Remove 95 Percent Ash And Soot From Boiler Gases

HYDRO'S new Toronto Steam Generating Station, now being constructed on Toronto's eastern waterfront, will cause no aggravation of the city's smoke problem when it comes into operation in 1951.

In making this announcement, Commission Chairman Robert H. Saunders stated, that despite the fact that the plant will derive its power from the burning of coal to generate steam, it will discharge considerably less smoke than is permitted by the latest Toronto smoke by-law. "The by-law requires the elimination of 85 per cent of soot and ash particles from the boiler flue gases," said Mr. Saunders, "while the equipment we are installing in our Toronto plant will eliminate more than 95 per cent of these substances before the gases are released into the atmosphere."

A steam generating station, it was pointed out, operates by burning coal to generate steam. The steam is used to turn the turbine generators that develop the electrical power. The Toronto Steam Station, it was stated, will have an initial installation of two 850,000-pound-per-hour steam generators to supply the two steam turbine generators. The Station's initial generating capacity will be 155,000 kilowatts (210,000 hp.).

Each of the steam generating units is capable of consuming about 50 tons of coal an hour when operating at maximum capacity. This is the equivalent of a fully loaded railway car, he added. The type of "smoke" that might be expected from the plant, he continued, would fall into two classifications. The first of these is "dust" or "soot" — fine particles of coal remaining in the gases due to incomplete combustion. "There will be no "dust" or "soot" coming from our plant," said Mr. Saunders, "because it will be definitely eliminated by mechanical separation."

The second type of smoke to be dealt with, he pointed out, consists of the ash particles remaining in the gases after the coal has been burned and known as "fly-ash." The elimination of more than 95 per cent of this substance will be ensured, it was stated, by the installation of electrical precipitators. There will be so little visible discharge from the station's 250-foot smoke stacks that an observer will be unable to determine if the plant is in operation by observing the smoke stacks.

Similar equipment of the same efficiency will also be installed in the Commission's Windsor Steam Generating Station, thus ensuring that there will be no added smoke nuisance along the border city's waterfront, already a heavily industrialized area.

THEY SAW

Continued from page 6

dam and then down into the great excavation below. Already the structural skeleton of the power house was taking shape, with a Gantry crane in position under the steel latticework of the roofing girders.

After making short work of the delicious luncheon prepared by Chef Rocky Savard and his staff, the party boarded the buses for the two-hour journey to Chenaux. Arriving there just before dusk, there was time for a brief inspection of the main dam and construction site with narrative description again provided by Gowan Guest. Then on to dinner in the camp cafeteria. It was a tired but happy crew that climbed aboard the train at Renfrew for the return journey to Toronto.

From the remarks of the visiting party overheard during their actual tours of the two projects, it was clearly evident that the trip was an unqualified success. For the members of this particular group, all occupying key posts in their own organizations, it was a revelation to view at first-hand the ultimate destination of some of the great quantities of materials and equipment supplied to Hydro since the beginning of its great expansion program and still essential for the successful culmination of the job in the months that lie ahead.

CONSUMPTION INCREASES

Use of water and electricity in August, 1949, exceeded the top levels of August, 1948, R. L. Dobbin, Manager of Peterborough P.U.C. reported recently.

FLATS WILL USE POWER STATION'S EXHAUST HEAT — **A new plant is now under erection on the Pimlico Housing estate of the City of Westminster, England, whereby for the first time in that country, exhaust heat from a power station will be used to provide space heating and hot water for blocks of flats. On the Thamesside site it is planned to build 1,600 flats, and the first four blocks, nine stories high, are now in course of construction. A prominent feature is the tower, which is to be the heat accumulator to store heat generated at Battersea power station, and to store it much the same way as a gasometer retains gas. The exhaust steam of the generating station is to be borne by means of water as a heat carrier through pipes in an existing underwater tunnel to a substation consisting of a pump house and the heat accumulator. This picture shows a panoramic view of part of the site. It will contain 370 flats in four blocks of one to four bedroom flats. On the left is seen the framework of the heat accumulator, with the pump house below.**



COMING OF HYDRO

NEW "Fling" FOR HIGHLANDS



LOCATED ON the picturesque shores of Loch Lomond, this is the power plant for the Loch Sloy scheme. The pipe lines, which reach some 500 feet up the side of the mountain, convey the water from the reservoir at Loch Sloy to the plant.

PEOPLE in the Highlands of Scotland are really going to have their "fling" with the coming of hydro-electric power to these rugged but majestic areas of hill and loch where, down through the years, shepherds have kept lonely vigil over their sheep.

Scots who have nostalgic memories of childhood days when they cycled or hiked through various parts of the Scottish Highlands, and who recall miles of heather-carpeted hills and seeing the towering reaches of Ben Lomond looming through the morning mist, will find it difficult to visualize the dramatic transformation which hydro-power will inevitably effect in these parts of Auld Scotia.

Already, that transformation is taking shape as Scotland sets about the task of harnessing the hitherto untamed waters of the Highlands. While it is an undertaking which will be followed with keen interest by all Scots, it is also of more than passing interest to all who are associated with the vitally important work of generating, transmitting and distributing power.

A. E. MacColl, Deputy Chairman of the North of Scotland Hydro-Electric Board, pointed out in a recent article, directed to out attention, that a total of 16 schemes had been announced, covering the construction of 29 power plants with a total capacity of 627,400 kilowatts and an estimated annual output of approximately 1,700,000,000 units. This is reported to be well in excess of 40 percent of the present electricity consumption of the whole of Scotland. Earlier in the year, when Mr. MacColl's article was published, contracts totalling approximately $160,000,000 had been awarded by The North of Scotland Hydro-Electric Board in connection with this power development program.

The first two groups of major schemes are designed to meet not only increasing demands for power in the Board's own area in northeast Scotland, but to provide a certain amount of export to the British Electricity Authority's grid system.

The Sloy, Shira and Allt-na-Lairige schemes with a plant capacity of 180,000 kilowatts and an annual output of 230,000,000 units will largely contribute to the easing of the power shortage in the West of Scotland. The Tummel-Garry group, consisting of Pitlochry, Clunie and Errochty stations, having a capacity of 145,000 kilowatts and an annual output of 300,000,000 units, will help meet increasing demands in northeast Scotland as well as industrial requirements in central Scotland.

These and other important projects are now taking shape and will form part of a major constructional effort to create a "Grid" in the Highlands. This program of construction, it is reported, is scheduled to be completed in 1952.

Three principal factors, it is pointed out, emerge in the plan which is being followed. First, more mainland stations are of the single unit type, the cost being less and the control and operation simpler. Secondly, where the terrain permits, the tendency is to place the power stations underground, the governing factors being (1) security against possible future enemy action; (2) shortage of steel—(the high pressure tunnel replaces the steel pipe-line): (3) amenity.

A FAR-REACHING transition in the lonely but majestic Highlands of Scotland is predicted as the hitherto untamed waters in these areas are harnessed to generate hydro-electric power to give a vital stimulus to new industrial activity. This panoramic view of the dam at Loch Sloy shows the buttress formation of the structure, 180 feet in height and 1,200 feet long when completed.



NEWS IN BRIEF

ST. LAWRENCE SEAWAY

An Associated Press despatch published in the U.S.A. Federal Power Commission Daily News Digest on September 28, reads as follows:

"Senator Wiley (Rep. Wis.), said he will insist that the Senate Foreign Relations Committee act on St. Lawrence seaway legislation next year. 'The committee', he said in a statement, 'seems to have found time to report every other important bill pending before it designed to donate money abroad'. Well, it's time that we had a Marshall Plan for the United States and Canada by completing this 2,347-mile seaway from Duluth, Minn., to the Gulf of the St. Lawrence. Wiley criticized an anti-seaway speech made September 14 at Durham, N.H., by Carroll Huntress, chairman of the National St. Lawrence project conference. Said the senator: 'Mr. Huntress' arguments are compounded of one part stale bologna, one part smear sauce and one part scare spice'. President Truman's disclosure that Russia has cracked the secret of atomic energy was cited by Wiley as one more reason the United States should undertake construction of the proposed seaway and power project. The Joint Chiefs of Staff, he said, have confirmed that the seaway would be helpful to United States defense."

INCREASED OUTPUT

An increase of two per cent over the preceding month's figures was shown by the output of central electric stations in Canada during the month of August, according to a Dominion Bureau of Statistics report. The output, amounting to 3,798,459,000 kilowatt-hours, also showed an increase of three per cent over the figure for August 1948. Total for the first eight months of this year, which was 30,990,729,000 kilowatt-hours, advanced four per cent over the similar period of 1948.

SWEDEN PUSHES DEVELOPMENT

Largest power plant ever built in Sweden is under construction in that country's Lapland region above the Arctic Circle. Because of Sweden's lack of other types of fuel it is developing its water resources extensively. As most of the industrial activity is in the south of Sweden long transmission lines are necessary to carry electricity from the northern power stations. About 50,000,000,000 kilowatt-hours may be economically developed in this Scandinavian country, an article in the American-Swedish monthly reports. By the end of 1948 an output of about 14,000,000,000 kilowatt-hours was being produced.

NEW RECORD

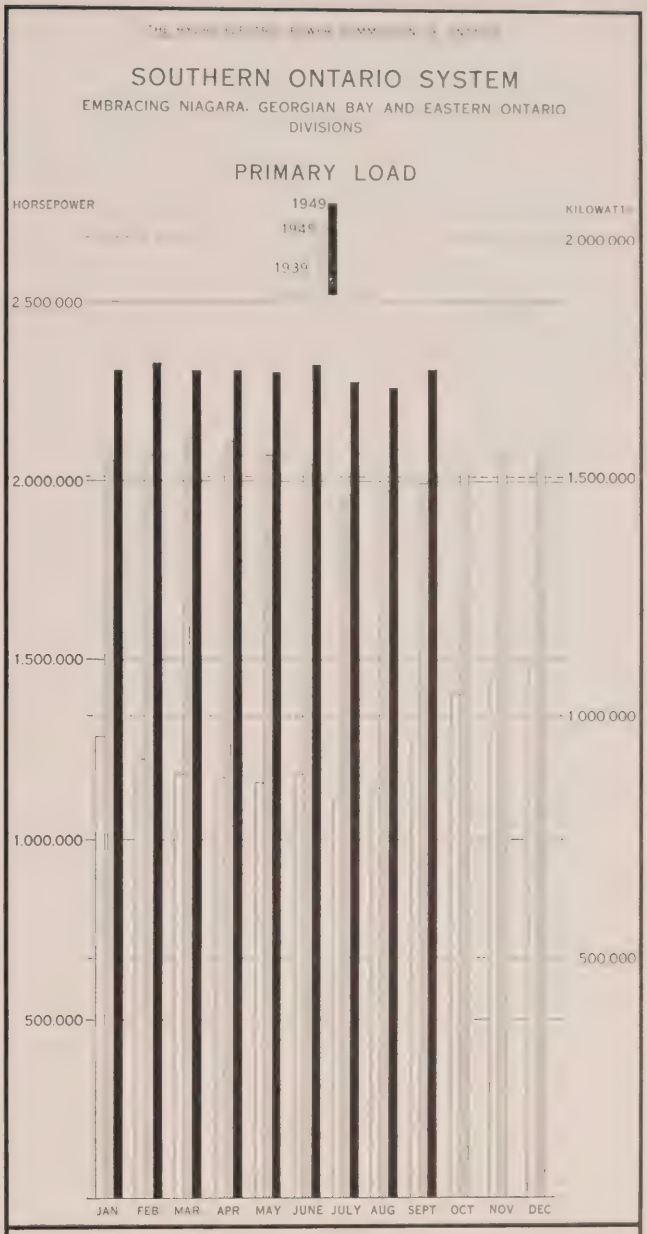
Total installed capacity of United States generating plants in utility service passed the 60 million kilowatt mark in August for the first time, the Federal Power Commission reported recently. A net increase of 739,120 kilowatts was reported during the month.

DELEGATES VISIT CANADA

Recent visitors to Niagara Falls were 50 delegates from the British Empire Service League who were attending the 19th biennial conference in Ottawa. Among the 25 Commonwealth countries represented were New Zealand, Gold Coast, Sierra Leone and Malaya.

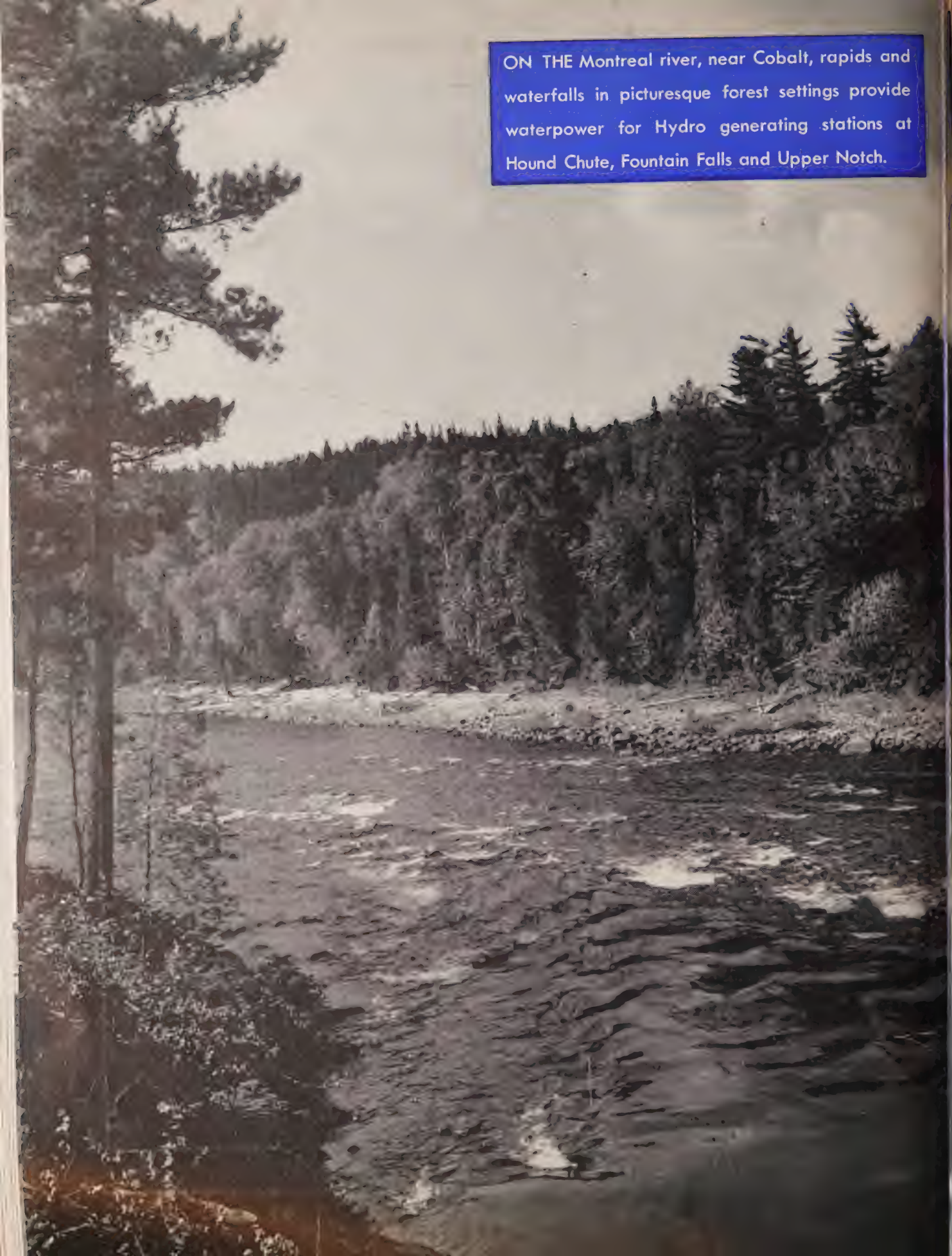
COLOUR TELEVISION

Two television manufacturers who have been experimenting with colour sets estimate that they could market them at prices ranging from $220 to $304, in the United States. Converters for black and white sets could be manufactured from $90 to $100, the manufacturers stated.



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW SEPTEMBER 1949	SEPTEMBER 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System ...	1.893.359	1.878.851	+ 0.8
Thunder Bay System.....	165.250	121.475	+ 36.0
Northern Ontario Properties.	222.090	207.593	+ 7.0
TOTAL GENERATION — INCLUDING PCW			
Southern Ontario System ...	1.725.599	1.647.591	+ 4.7
Thunder Bay System.....	170.050	117.515	+ 44.6
Northern Ontario Properties	222.090	243.048	— 8.6



ON THE Montreal river, near Cobalt, rapids and waterfalls in picturesque forest settings provide waterpower for Hydro generating stations at Hound Chute, Fountain Falls and Upper Notch.



L. 36 DECEMBER, 1949 NUMBER 12

SNAP DRAGON

By PETER NORTH
H.E.P.C. Staff

Have you ever had a Christmas party at your house when during the evening there was a lull, and you were afraid of a stalemate? That is the time to trot out your Snap Dragon and spring a novel surprise.

Probably you have never heard of a Snap Dragon. In that case, I must hasten to explain that it is an old English Christmas custom, dating back hundreds of years. At one time, no Christmas party was complete without its Snap Dragon, and for all I know this charming old pastime may still prevail.

You need a bottle of brandy, a number of large seedless raisins — the number depending upon the size of your party — a small handful of salt and a red hot poker. Place the raisins on a large platter and cover with brandy. Switch off the lights, then using a lighted match, set the brandy on fire. Now the fun begins. The excited guests, with quick fingers, pull the soaked raisins from the blue flames. What a treat!

When the last raisin has been retrieved and eaten, stir the salt into the remaining brandy with the red hot poker. Now look at the faces of your guests. All are a ghastly green colour due to the fumes produced when the hot iron contacts the salted brandy. Each member of your party looks like something from another world until the effect wears off, which takes only a short time.

I well remember a Christmas family party in England when I was a little boy. We were all there: father, mother, aunts, uncles, and cousins of all sizes. Towards the end of the evening there was an air of expectancy when my grandfather entered the room carrying the necessary ingredients for the Snap Dragon. We all watched intently while he placed the raisins on the platter, covered them with brandy, turned the gaslight very low, and then ignited the brandy. I was too small to pull out my own raisins but my mother gave me two of hers, and to this day I can recall the taste.

Then came the big moment. Grandpa sprinkled the salt and stirred with the red hot poker. The room was filled with shouts of laughter as we looked at each other. Poor old Aunt Minnie gave the appearance of a sinister witch, and this was such a shock to me that I have never forgotten the sight.

So, why not have a Snap Dragon at your next Christmas party? Save your brandy; get the fattest, juiciest raisins you can find, and hide them where your family won't discover them. Then when the time comes spring your novel surprise. Your reputation as a hostess will be made for life!

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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SUBSCRIPTION: $2.00 PER YEAR

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Volume 36 Number 12

DECEMBER 1949

CHRISTMAS COVERS

IF, through some magic power, this front cover reproduction could be endowed with the glorious and majestic voice of the organ, it would carol the soul-stirring and immortal Message of this Glad Season. Through these hands which touch the organ manuals, we seek to strike a responsive chord in the hearts of all our readers, conveying to them, in this way, the warmth and sincerity of our wishes for their happiness. And in the beauty of the back cover may they discover that inspiration which will enable them to cross the threshold of 1950 with hearts and minds rededicated to the accomplishment of great and noble tasks which lie ahead.

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Christmas 1949









As 1949 comes to a close, members of the Hydro Family throughout Ontario—those who serve the various Hydro municipalities as well as those who serve the Commission—can look back upon a year of noteworthy achievement. Each in his or her own particular sphere, has made a contribution to the progress of Hydro which is so vitally interwoven with the daily lives of the people of Ontario—in factories, offices and homes, and on the farms.

In crossing the threshold of 1950, Hydro goes forward to the accomplishment of still greater tasks.

At this time, however, all members of the Hydro Family, in common with their fellow Canadians across this favoured land, pause to remember the significance of Christmas.

To all Hydro folk everywhere, the members of the Commission and management of the H.E.P.C. extend most sincere greetings and express the hope that all the joys and blessings of Christmas may remain with one and all throughout a Happy New Year.

SANTA CLAUS IS HERE

LINKED with the Christmas season, although not perhaps directly associated with its religious significance, are many time-honoured traditions. Among the most cherished, with us at any rate, is the credence we give to Santa Claus. We believe — and if we are the right sort of people we have good reason for our faith — that the spirit of old St. Nicholas is still very much alive in our midst at this holiday season when we celebrate the Birth at Bethlehem.

Fortunately, in this Canada of ours, Santa Claus has been given the freedom of our towns and cities and the right to wander where he will about our countryside. He may still carry on with his seasonal, traditional occupation in his own inimitable way. Most of us grown-ups have already seen him driving his team of reindeer in festive parade, talking to children in Toyland or perhaps standing a-shake with jovial laughter at the door of his glittering Palace of Ice. As we pass from place to place where this hearty, jolly old fellow displays himself, we begin to wonder . . . and then we realize that Santa Claus has the power to make himself ubiquitous and that the best place of all to look for him and to really enjoy his company is at home in our own hearts.

This year Santa Claus will have a lot to tell us grown-up folk. There will be some bright news and a good deal of news that is not so bright. In our own country, for instance — and Santa has canvassed conditions everywhere from St. John's, Newfoundland, to Victoria, B.C. — he believes that the majority of the boys and girls he loves so well are going to have a very jolly Christmas. But, he points out — and this from close personal observation, too — there will be many exceptions; that is, he is quick to add, with that wonderful fetching smile of his, unless we are willing to help him out as he is sure we shall be.

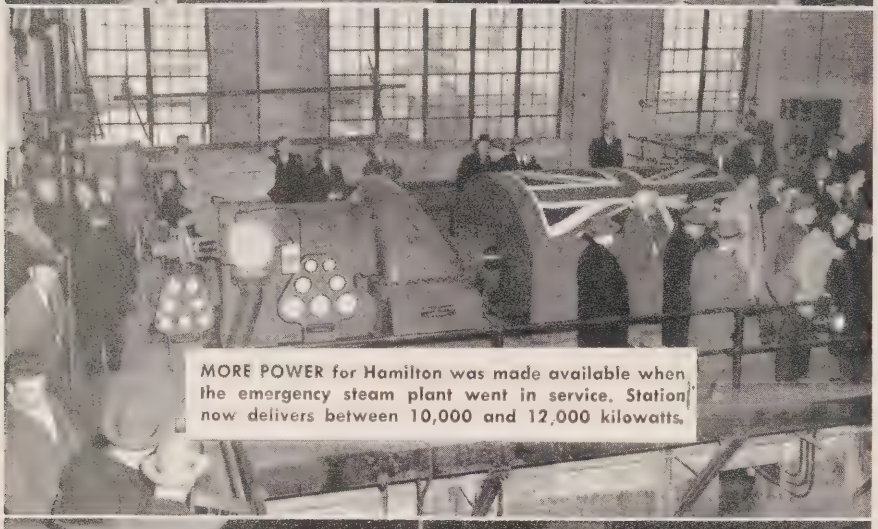
Just as Santa Claus is ubiquitous, so also he has formed the excellent habit of localizing himself wherever he finds himself, and of taking a special interest in his immediate surroundings. In this sense, there is no doubt in the world that he regards himself not only as the Santa Claus of the Hydro Family at large but also as the particular Santa Claus of every one of the nine hundred and seventy municipal units of that great family scattered throughout the length and breadth of the Province of Ontario. Contacts during the Yuletide season between all these individual Santa Clauses should be a wonderful example of co-operation in peace and harmony and should provide inspiration for continued amity and good-fellowship between the different branches of the Hydro Family until Christmas comes around again.

Santa Claus wishes us to enter with a spontaneous happiness into the Yuletide spirit. No long faces, he warns us. To do good, we've got to feel good. But — and that jovial but admonitory smile of his once again — as concerns the inner man, moderation in all things.

So Hydro News passes along this thought to its readers with its very best wishes for a Merry Christmas and a Happy New Year.



HAMILTON'S MAYOR Sam Lawrence officiated as the Hamilton Steam G. S. was placed in service November 23. Hydro Chairman Saunders and others look on.



MORE POWER for Hamilton was made available when the emergency steam plant went in service. Station now delivers between 10,000 and 12,000 kilowatts.



STEAM GENERATOR bearings operated so smoothly that dimes balanced on outer casing. Demonstrating are S. L. Fear, liaison steam engineer, and R. L. Hearn.

MOR

EMERGENCY STEAM S

HAMILTON

HAMILTON Steam Generating Station is now delivering a total of 10,000 to 12,000 kilowatts to help serve the needs of that city.

With Mayor Sam Lawrence officiating, the first 5,000-kilowatt unit was placed in service on November 23 and the second unit during December.

These are two of a number of emergency units which are being placed in service progressively this winter, not only at Hamilton but in Toronto, Thorold and Chatham.

In addition to the Mayor, and representatives of the Board of Control and City Council, several of Hamilton's leading industrialists were present for the ceremony. Hydro Chairman Robert H. Saunders; Hon. George H. Challies, M.L.A., Vice-Chairman; R. L. Hearn, General Manager and Chief Engineer, and other officials and engineers represented The Hydro-Electric Power Commission of Ontario.

Mr. Saunders, who introduced Mayor Lawrence, declared that the Hamilton station would help materially until Hydro's big Des Joachims plant came into operation.

Mayor Lawrence told the gathering that it was good news for Hamilton when the Commission announced that the steam generating station would be opened. He said that he voiced the wish of Hamilton citizens that it would be further enlarged to produce still more power.

Situated strategically near the area it is to serve and adjacent to Hamilton Bay, the Hamilton Steam Generating Station is on the site of the former steam plant constructed in 1916 by the Dominion Power and Transmission Company. The station will have an abundant supply of water for condensing purposes and will utilize the old plant's water intake facilities.

Designed for 60-cycle generation, the output of the station eventually will serve Hamilton's present 25-cycle area when that city is converted to 60-cycle operation. To alleviate the November demand for energy, power was, during that month, generated at 66⅔ cycles and fed into the old DeCew system, thereby releasing more water for additional 25-cycle generation at DeCew. When the second unit was placed in service, power from both units was generated at 60 cycles and fed into a frequency changer at the Canadian Westinghouse Company's plant in Hamilton.

The station has four steam generators. Each of the generators will supply 35,000

(Continued on page 16)

OWER

LACED IN SERVICE

"SCARBORO"

WITH the turning of a valve by W. H. Bosley, Chairman of the Toronto Harbour Commission, the closing of a switch by Loftus H. Reid, Chairman of the Toronto Hydro-Electric System, and an address by Commission Chairman Robert H. Saunders, the first unit of the "Scarboro" Steam Generating Station was placed in service on November 17.

Opening of the Scarboro station, whose ultimate capacity will be 20,000 kilowatts, marks the inauguration of the first of several emergency steam stations being constructed by Hydro to help ease the power situation. Other stations are expected to come into service progressively over the subsequent six or eight weeks, providing altogether between 60,000 and 70,000 kilowatts for the Commission's Southern Ontario System.

Construction on the plant was commenced last summer, and it is expected that by the end of December all four units will be in operation. Each of the four steam generators will supply 70,000 pounds of steam per hour, at a pressure of 400 PSIG and a total temperature of 700°F. The furnaces will be provided with automatic stokers which will burn coal at the rate of 400 tons a day.

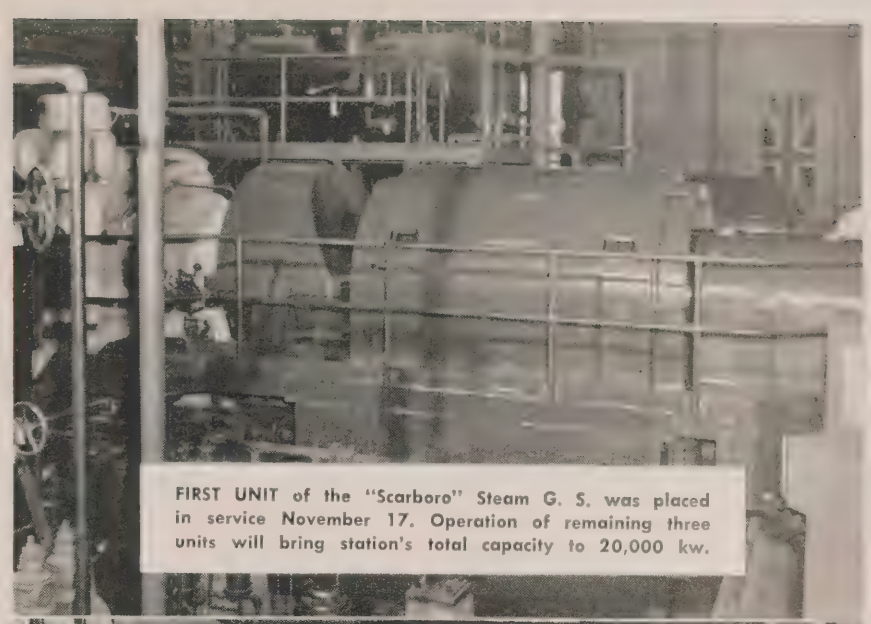
Speaking to officials gathered for the ceremony, Mr. Saunders paid tribute to everyone concerned with the erection of the station, for making possible its completion more than a week ahead of previous expectations.

The station is located on a 7½-acre tract of land on Unwin Avenue, at the eastern end of the Toronto waterfront, south of the turning basin. The property is situated immediately east of the site of the Toronto Steam G.S., Hydro's largest projected steam undertaking, which is scheduled for completion in 1951.

The seeming discrepancy between the name of the station and its location is accounted for by the fact that original plans called for the station to be erected near the Scarboro Frequency Changer and Transformer Station. Because of insufficient supplies of cooling water, the plans were altered, and the equipment was transferred to the waterfront property, where water conditions were adequate.

Initial delivery of power from the Scarboro station marks the first time since 1919 that 60-cycle power has been generated in the 25-cycle Toronto area. At that time there were two 60-cycle

(Continued on page 16)



FIRST UNIT of the "Scarboro" Steam G. S. was placed in service November 17. Operation of remaining three units will bring station's total capacity to 20,000 kw.



OPENING SWITCH is turned by Loftus H. Reid, Toronto Hydro Chairman, watched by R. L. Hearn, R. H. Saunders, and W. H. Bosley, Toronto Harbour Commission Chairman.



SCARBORO STATION, on Toronto waterfront, is first of Hydro's emergency steam stations to go into operation this fall. Others are at Hamilton, Chatham, Thorold.

"THE CRITICAL PERIOD"

by
C. G. W. MacIntosh
Hydro News

Need For Voluntary Saving Of Power Strongly Emphasized At District No. 7 O.M.E.A. Meeting

"THIS is the critical period." That was the frank pronouncement of A. W. Manby, Hydro's Assistant General Manager—Administration, speaking about Ontario's power situation at the fall convention and annual meeting of District No. 7 O.M.E.A. at Hotel London, in London, November 23.

However, Mr. Manby added that he was confident Hydro could get by to the end of February—the critical period—if given the full co-operation of all consumers, domestic, commercial and industrial "in conserving power scrupulously." Other speakers, including Robert H. Saunders, Hydro's Chairman, stressed the importance of voluntary conservation by all classes of consumers.

Mr. Manby revealed that he believed firmly that this would be the last year of power restrictions. This belief was based, he said, on the fact that Hydro's big Des Joachims development on the Ottawa River would be in service in 1950 to supply Southern Ontario. There also would be a "tie line" to Northern Ontario.

Referring briefly to Northern Ontario, Mr. Manby revealed that this section of the province also had been hard hit by shortage of water because of abnormally light rainfall. He said that Hydro had appealed to mine operators and other consumers and they had agreed to co-operate wholeheartedly by cutting their consumption ten percent.

Beyond Control Of Hydro

In connection with the Southern Ontario power shortage, Mr. Manby pointed out that this condition was caused by various factors beyond the control of Hydro. One Quebec supplier, he said, had been forced to cut 3,385,000 kilowatthours per week because of critical water conditions and another large Quebec supplier likewise had just notified Hydro that the company could not continue to deliver the contractual amount of power this winter for the same reason. However, Mr. Manby said, this supplier promised that the curtailment would not occur until Hydro had its emergency steam generating stations operating and the additional power supply became available from Hydro's DeCew plant through extra water diversion.

The emergency steam stations would give between 60,000 and 70,000 kilowatts, and the DeCew diversion would provide approximately 1,250,000 kilowatthours daily. Meanwhile Hydro has made an all-out effort to obtain power from various sources during the emergency, including a private power company in the Niagara area and from U.S. firms. He said that 11,000 kilowatts also had been picked up in auxiliary sets and the Commission possibly might get 4,000 to 5,000 kilowatts more. These were the reasons, he said, for suggesting that Hydro might get by providing, of course, that all the Commission's plants were operating and there were no breakdowns.

Mr. Manby spoke briefly about the regional offices which he said were rendering an important service to the municipalities. He also referred to Hydro's frequency conversion program and stated that although the Commission had experienced difficulties in getting materials in time, it was felt that real progress was being made with the program. He said that Hydro was preparing for conversion in the London area next year.

The next speaker, H. H. Leeming, Hydro's Director of Frequency Conversion, dealt extensively with this subject. He stated that a total of 3,600 consumers had been converted up to November 23. In all 126,000 consumers have been surveyed and Mr. Leeming felt that the frequency conversion program would be up to schedule by the time the main work started.

Reason for falling behind schedule, the director said, was the failure of manufacturers to deliver materials on time. If these materials had been received, he declared, the schedule could have been maintained.

Will Accelerate Conversion

Mr. Leeming said that it was expected that the material supply situation would improve. It was the intention to accelerate the frequency conversion work from January to May.

In answer to questions, Mr. Leeming said that the Commission bore the entire cost of changing over equipment of domestic and commercial consumers, while industrial consumers had to meet approximately 30 percent of the cost of changing over their equipment. To a large degree, he said, industrialists would be compensated by having their equipment brought right up to date. Mr. Leeming pointed out, too, that industries had reserves set aside for depreciation and replacement of equipment so this would not be burdensome.

W. Ross Strike, K.C., Hydro's Second Vice-Chairman, said that the

(Continued on page 8)



BOUTONNIERE IS presented by R. W. D. Lewis, K.C., London Public Utilities Commission, to George Hutcheson of Huntsville, O.M.E.A. President at District No. 7 meeting.





MAN for the moment
Leeming, Hydro Fre-
Conversion Director.
n are Mayor J. B.
of St. Thomas, Russ.
e, Western Regional
and J. W. Peart, St.
Commission Manager.

★

Y PROBLEM is being
S. R. McBrien, Man-
the Aylmer PUC as
rrie, Consumer Serv-
ntendent, London,
son, Western Region
and E. R. Clement,
IC Chairman, listen.



HAVE A cigar, Hydro's Chairman, Robert H. Saunders, non-smoker, urges Percy R. Locke, of St. Thomas, District 7 O.M.E.A. President. Alex G. Calder, Chairman of the London Public Utilities Commission, agrees that he should accept.

HOTEL HALLWAY was popu
spot for discussing Hydro
fairs. Included with W. R
Strike, Hydro's 2nd Vice Cha
man, are H R. Hendrse
Woodstock PUC Chairman a
W. F. Craig, right, of t
Woodstock Commission.

★

WINTER'S FIRST severe sto
intrigues this St. Thomas Pub
Utilities Commission group, le
R. T. Gilbert, George Lar
holding curtain and E. Seg
whom the cameraman caug
looking out of the windo
during London session.





CRITICAL PERIOD

(Continued from page 6)

O.M.E.A. had an important part to play in the Hydro set-up in the province. He maintained that the O.M.E.A. helped to strengthen the whole Hydro organization because it was decentralized and maintained contact at the consumer level.

The strength of the set-up, he said, was in the fact that generation and transmission were vested in one body, the Commission, with distribution handled by the Public Utilities which were close to the people. The connecting link between the two was the O.M.E.A. and that was its proper function and where it fitted. Mr. Strike maintained that because the O.M.E.A. was an important connecting link, which was close to the consumers, it had an important role to play.

Chairman Is Guest Speaker

Principal guest speaker at the meeting was Hydro's Chairman, Robert H. Saunders. Tributes were paid to him by the Chairman of District No. 7, Percy R. Locke, of St. Thomas, and by Alex G. Calder, Chairman of the London Public Utilities Commission. The latter stated that Hydro's Chairman seemed to be endowed with great physical strength to be able to get around the province constantly to inspect the various developments and to visit the many municipalities. The cordial feelings which Mr. Saunders had built up in relation to zone members seemed apparent from the fact that most of the members called the Chairman "Bob," Mr. Calder said.

Chairman Saunders stated that he had tried to attend every O.M.E.A. district convention and to visit all Ontario communities. 'I believe," he declared, "that it is important for the Chairman of Hydro to know Ontario and what the need is in each community. I should know you, and you should know me.

"This is the people's Hydro—you own it and have a right to know the conditions," he added.

Mr. Saunders said that Hydro was passing through a rather worrisome period. One of the Quebec suppliers, he said, had just notified the Commission that the contractual amount of power could not be supplied during December, January and February. But, he declared, if we continue to get the co-operation that the people can give us, and with the restrictions, Hydro should be able to pull through without additional compulsory safeguards.

Greetings were brought to District No. 7 group from the parent association by George Hutcheson of Huntsville, President of the O.M.E.A. He said that when the new developments that Hydro has under way are seen, it can be realized the great expansion that will be possible in Ontario.

During the discussion period, a resolution was passed by District No. 7 favouring the setting up of municipal standards system by Hydro. A second resolution directed to the O.M.E.A. urged consideration be given to engaging a joint secretary for the O.M.E.A. and A.M.E.U. and providing an office outside the Ontario Hydro building. The O.M.E.A. also will be asked to investigate a plan to increase the pension scheme for employees.

The officers of District No. 7, Percy R. Locke, President, of St. Thomas, and H. R. Henderson of Woodstock, and R. W. D. Lewis, K.C., of London, Directors, were re-elected for another year.

An invitation to hold the spring meeting at Woodstock was accepted.

PLAN DEBENTURE ISSUE

Chairman W. A. Williams of the Sarnia Hydro Electric Commission announced recently that the commission intends to float a $250,000 debenture issue to pay the cost of frequency conversion and other capital expenditures necessitated by the growth of the system. Preliminary steps for floating the issue have already been taken.

Newspaper Group Tours Des Joachims Project



REGISTERING UNQUALIFIED approval of the progress noted at Des Joachims, Hydro's senior postwar power project, is this group of newspapermen, members of a party of newspaper representatives who toured the project recently. Silhouetted against the downstream side of the 2,400-foot main dam, this group includes, left to right: George Brimmell, *Toronto Telegram;* Bascom St. John, Toronto *Globe and Mail;* H. J. Helm, *Kitchener-Waterloo Record;* William Hogg, Senior Resident Engineer; O. N. Wilson, Thomson Dailies; Angus Richardson, Project Manager; C. J. Woodsworth, *Ottawa Citizen* and F. W. Pollard, *Brantford Expositor.*



ABOVE—Four Commission employees, left to right, Construction Foreman, F. Rowat, A. H. Wood, John Duncan and Jack Hamilton examine new power cable prior to laying it on the bottom of the North Channel at Little Current. Below—Playing out three-inch cable which is now carrying additional power to Manitoulin Island.

Operation Manitoulin

★

Laying Of Cable Across North Channel Completes Link In Hydro's Northern Network

by

John A. Murphy
Hydro News

A MAJOR link in the Hydro network in Northern Ontario was completed recently with the laying of a 1,000-foot, 12,000-volt submarine cable across the North Channel from Goat Island to Manitoulin Island.

After the initial attempt to lay the cable was balked by strong winds and strong current, the operation was successfully completed Wednesday, October 5. Two work crews, comprising thirty men, were required for the laying of this cable across the 300-yard channel. They were under the supervision of F. R. Rowat and Jim Sims of the Hydro Construction Division.

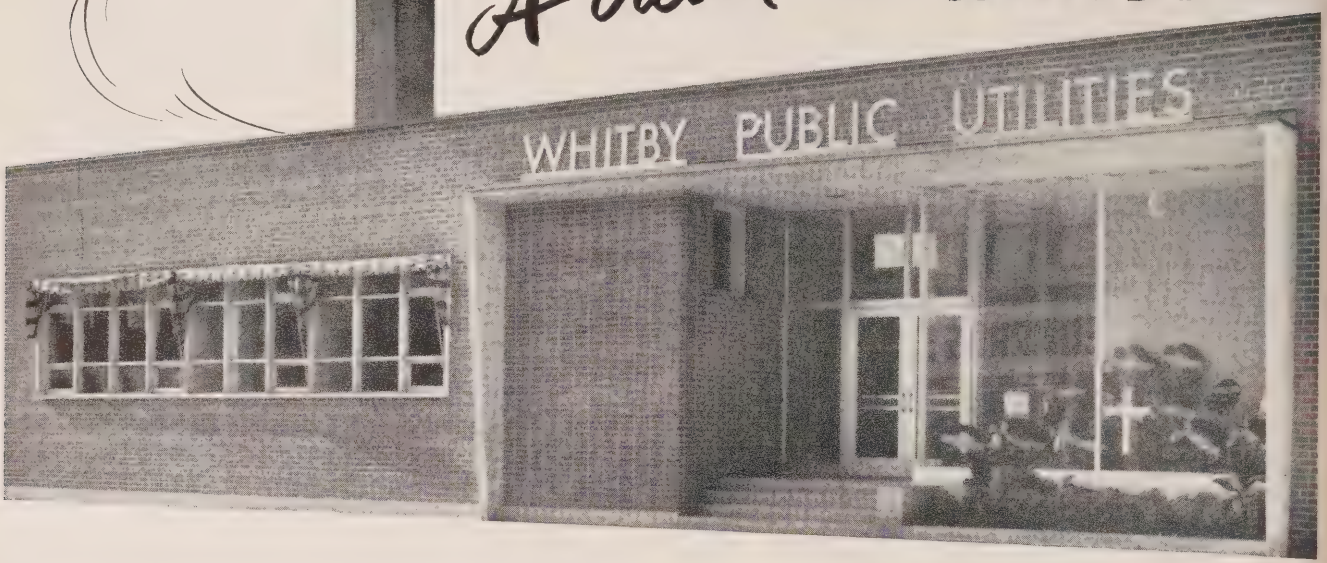
The cable itself weighs about five tons, is 1,000 feet long and three inches thick,

(Continued on page 15)

(Photographs by Manitoulin Expositor)



"A credit to WHITBY"



Chairman Saunders Opens New P.U.C. Building

by
John A. Murphy
Hydro News

"THIS building is a great credit to the citizens of Whitby and particularly to the local Commission. Hydro and the province of Ontario are not standing still and this building is a clear indication that Whitby is not standing still."

In these words, Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario, officially opened the beautifully-designed new home of the Whitby Public Utilities Commission on Tuesday, November 22. The ceremony took place in the new offices of the Commission after "open house" had been held throughout the day for the townspeople to drop in and inspect the ultra-modern edifice.

During the afternoon Hydro films were shown to the students of Whitby Collegiate Institute by R. J. Cooksley of the Commission staff. The students were also addressed by a distinguished "old boy" of their school—E. R. Lawler, Manager of Hydro's Toronto Region.

Designed by John B. Parkin of Toronto, the new building incorporates the latest features in office comfort and efficiency. All phases of the P.U.C. activity will be carried out there as provision has been made in the rear of the offices for a well-equipped work shop and a garage for the Commission's motor vehicles. It is a building of which many a community of greater size than Whitby might well be proud. Consequently, it was an auspicious occasion for the members of the Whitby Public Utilities Commission who were responsible for its coming into being. Chairman W. M. Pringle and his Commissioners, F. T. Rowe, J. Ross, D. Mowat and Mayor William Davidson, and Superintendent H. L. Pringle have done their community a great service.

Rotary Dinner

Following the opening ceremony, Mr. Saunders was the guest speaker at a dinner given by the Whitby Rotary Club. On this occasion he again paid tribute to the spirit of community progress that had made the new P.U.C. building possible, before going on to cover some of the broader aspects of Hydro in the province.

"Hydro came into being," said Mr. Saunders, "because back in 1903 representatives of private enterprise in this province went to the Ontario Government and asked it to set up an organization to produce and deliver low-cost electric power to homes and industry. In 1915 Hydro was selling 100,000 horsepower; last week we were selling 2,700,000 horsepower of electrical energy to the people of this province."

The Chairman went on to say that there are 307 cost municipalities in the Hydro "family" with an overall total of 969 communities depending on the Commission for power. In the field of rural activity, he told his audience, 38,000 new consumers and 4,600 miles of rural lines had been added this year.

Tremendous Expansion

Speaking of the great construction program now at its zenith, Mr. Saunders stated that all the developments now under way were either on or ahead of schedule. "We are spending $582,000,000 on capital expansion," he said, "and it is interesting to note that $92,000,000 of that total is being spent on transmission facilities to get that new power to the consumers."

The present construction program, the gathering was told, will protect the province until 1952. "After that time," said Mr. Saunders, "we must realize additional generating power from the St. Lawrence, the Niagara Diversion or by enlarging our steam plants.

"At the present time," he continued, "the power situation is causing the Commission some concern, although it has definitely improved over a year ago. How-

(Continued on page 14)



...ily a progressive community spirit as he offi-
cially opened the P.U.C.'s new building. Left to
right are Commissioner F. T. Rowe, Chairman W. M.
Pringle, Mr. Saunders and Mayor William Davidson.

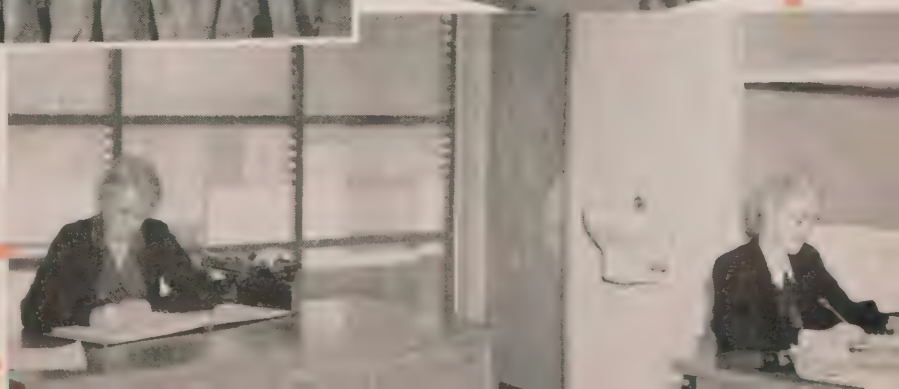


...DRO officials attended opening of the new
...In this group are H. D. Rothwell, H.E.P.C.;
...wry, H.E.P.C.; H. L. Pringle, Superintendent,
...U.C.; E. G. Gurnett, Manager, East Central
...H.E.P.C.; F. C. Adsett, H.E.P.C.; A. C. Hardy,
... E. R. Lawler, Manager, Toronto Region, H.E.P.C.



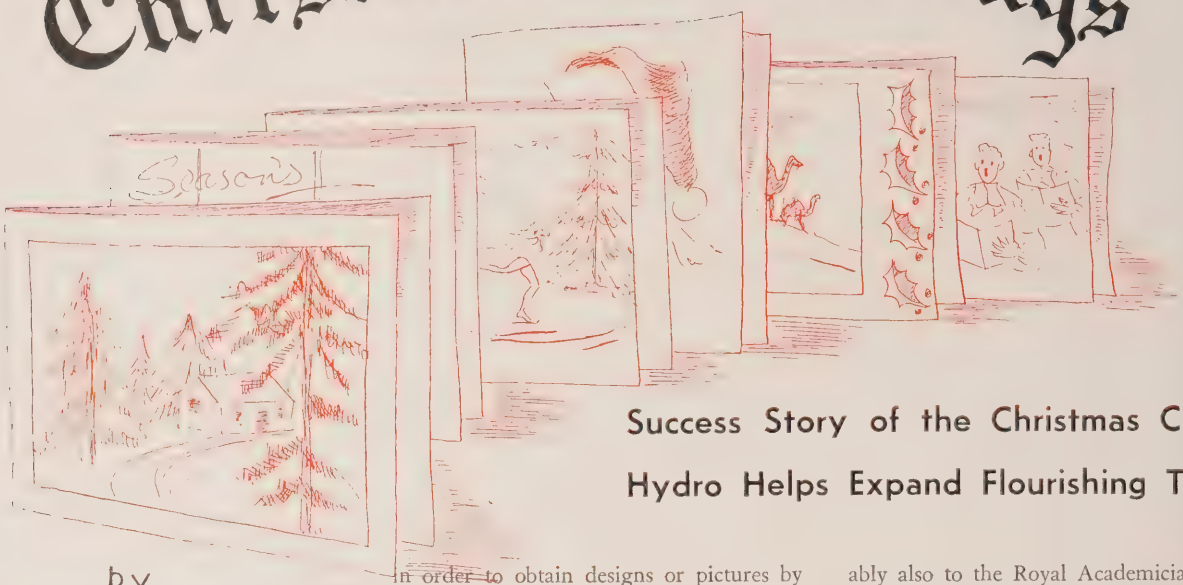
ARTHUR WIGSTON, Meter Maintenance Man, engages in a discussion with Bruce Connor regarding the day's chores ahead.

...L seven comprises the line maintenance crew of
...section of Whitby Public Utilities Commission.



...RUTINE at the Whitby P.U.C. is in the capable
...of Miss M. M. Ross (left) and Mrs. G. Lynde.

Christmas Greetings



Success Story of the Christmas Card—Hydro Helps Expand Flourishing Trade

by

Edith B. Kent
Hydro News

OVER a century ago, back in 1846, an Englishman named Henry Cole had an idea. This in itself is not remarkable, but this idea mushroomed into million-dollar businesses.

Briefly, Mr. Cole (later Sir Henry Cole) thought it would be rather a nice gesture to convey holiday greetings to his friends by means of a special card, on which would be a picture as well as the written message. Accordingly, he commissioned J. C. Horsley, an artist of the British Royal Academy, to design a suitable card. In due time, the design was finished, whereupon Mr. Cole sent it off to a company named Jobbins, of Warwick Court, Holborn, where it was lithographed and printed, then coloured by hand.

This was the first Christmas card.

Henry Cole ordered a thousand of these cards, and although his idea was at first ridiculed, it soon became "the thing" to send cards to friends at Christmas time. Since then, designs of every conceivable nature have been adapted for Christmas cards, printing firms have come and gone, methods of manufacture have changed, but the fundamental message of Christmas remains the same as on the original card — "A Merry Christmas and a Happy New Year To You."

For several decades after the "invention" of Christmas cards, their designers and manufacturers reaped a large sales harvest. Unlike most cards of today, the pasteboards were expensive, partly because the method of manufacture was still costly and partly because the manufacturers, aiming at a high artistic standard, were willing to expend large sums in order to obtain designs or pictures by well-known artists. Attracted by the substantial monetary prizes offered for the best design or picture, many big names in the artistic field, including several Royal Academicians, submitted original ideas. Paintings of children by Kate Greenaway, whose specialty was costume figures done in dainty colours, and etchings by Wilfrid Ball, were among the most popular designs of the 1880's.

A modern counterpart of these so-called "classical" designs may be found in the reproductions of paintings by such noted Canadian artists as the late Franz Johnston, and etchings by Lawren Harris.

Then as now, however, there was a tremendous variety in design. Animals, birds, flowers, hunting scenes, snow scenes — practically anything that can be drawn or painted was grist to the card manufacturer's mill. And, true to the Victorian tradition of ornateness, many of the more elaborate cards were embellished with silk fringes, perforated borders, "frosting" (the use of crushed glass to simulate snow), "jewelling" (a thin film of copper faced with various chemicals), and various other garnishings. This craze for "gingerbread" eventually reached rather ridiculous heights with the use of even grass and seaweed for trimming.

Although the manufacture of Christmas cards originated in England, it soon spread to the Continent, and with that spreading came a deterioration in artistic standards. European cards, particularly those produced in Germany, were of somewhat inferior quality to the English makes, and, therefore, could be produced and sold more cheaply. The influx of cards from Europe around 1890, coinciding with the increasing popularity of the custom of sending cards, inevitably brought about a decline in the better-class trade, much to the sorrow of British and American manufacturers, and probably also to the Royal Academicians.

The American branch of the Christmas card industry began in 1874 with the first products of the firm of Louis Prang and Company, of Boston. Although this company manufactured cards for less than twenty years, it attained a standard of artistic quality which is perhaps the highest ever reached before or since that time. In addition, the refinement of their lithographing process contributed in great measure to the general excellence of their cards. With the influx of European cards in the 1890's, however, competition became keen, and the Prang firm was forced to either lower its standards or discontinue the manufacture of Christmas cards. Clinging to its artistic integrity, it chose the latter course, leaving the field open to its American and non-American competitors.

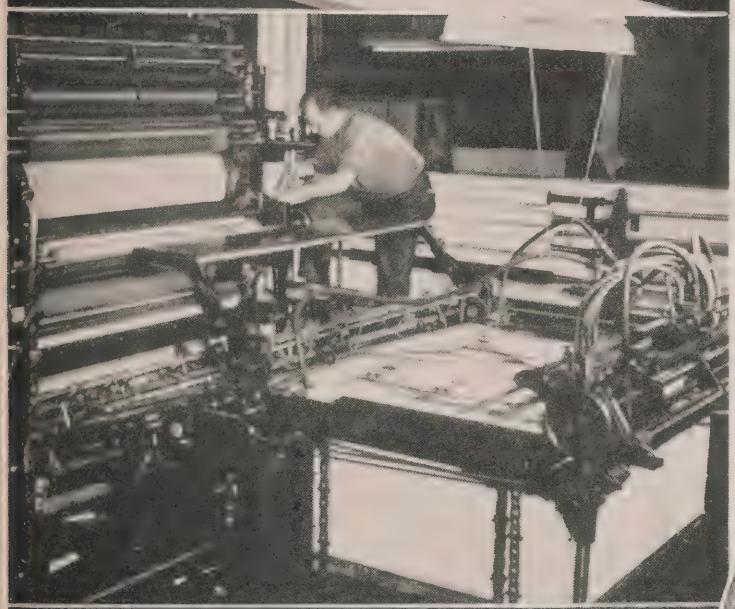
A curious fact concerning the Christmas cards of the 19th century is that the most popular designs of that period had no particular Christmas significance. But with the beginning of the second great era of American card manufacture, in 1908, Christmas came into its own. Snow scenes, religious subjects, and Santa Clauses became increasingly popular, together with auxiliary designs of holly, mistletoe, and the American-introduced poinsettia. Another American innovation was the matching envelope, which has always accompanied cards manufactured in the States.

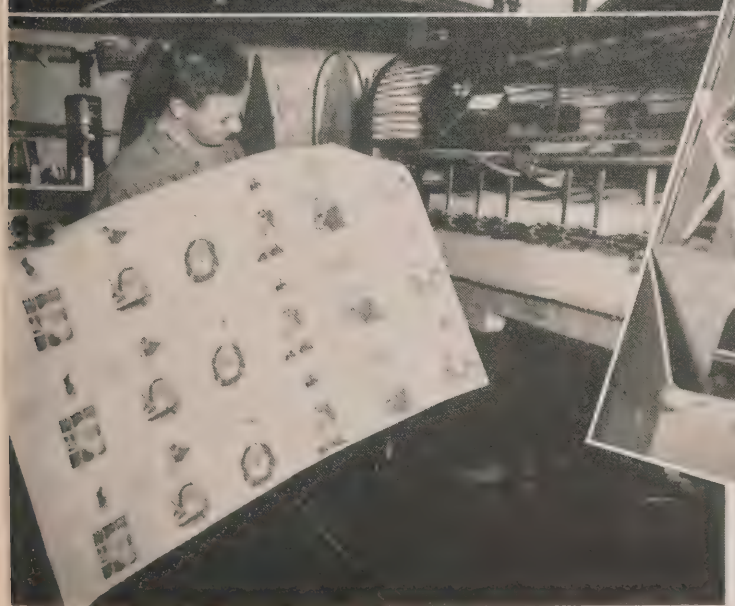
Novelty cards made their first appearance in 1884, with a set of comic cards by W. J. Hodgson, followed in 1891 by some political satire by the caricaturist Bryan. After a lapse of some 30 years, interest in comics and semi-comics revived, and in addition, cards began to reflect topics of the day.

Over the years, although several types

(Continued on page 15)









LAYOUT MAN (top left) arranges design on viewing table. Lighted from below, table permits accurate assembly of units.

OFFSET PRESS (left centre) is run by 12-hp motor. From 4,000 to 5,000 sheets per hour can be run off on this machine.

FINISHED SHEET is inspected (bottom left) as it comes off the press. Each sheet contains designs for 10 to 20 cards.

"GLITTER MACHINE" (below) sprinkles crushed glass on finished cards. Excess is shaken off by motion of conveyor belt.

CREDIT TO WHITBY

(Continued from page 10)

ever," he concluded, "with the utmost co-operation on everyone's part in observing the present restrictions and in the voluntary saving of power it is our hope that we can get through the winter without further restrictions."

The Rotary Club's delicious turkey dinner ("with all the trimmings") and Mr. Saunders' informative address, marked the successful culmination of one of the most memorable days since Whitby became a Hydro municipality in 1926. However, electricity first shed its beneficial light on the little lakeshore town many years before that. The Whitby Water and Light Commission was officially inaugurated in September, 1903. James Rutledge was the first Chairman, with Mayor E. R. Blow and Lyman T. Barclay the Commissioners. In those early days the system derived its power from steam generation until, in 1912, a contract was signed with the Seymour Power Company to supply hydraulic power from its plant on the Trent River. In 1916 the Public Utility Commission was formed to take care of the light, water and sewer facilities of the town. Ten years later, in June, 1926, Whitby added its name to the ever-growing roll of Hydro cost municipalities.

Steady Growth

The steady growth of the community is reflected in the figures showing the increase in power load over the years. In 1916, when the P.U.C. was formed, the total load was 217 horsepower. When the town became affiliated with Hydro, in October, 1926, the load had increased to 762 horsepower. At the present time the figure stands at 2,630 horsepower. There are in Whitby, by the latest figures, 1,230 domestic consumers, 193 commercial consumers and 34 industrial consumers. The town is served by 26.88 miles of transmission lines.

Today the Public Utilities Commission handles the water and sewer systems as well as Hydro. There are 25 members of the staff as a whole, eight of these being engaged on Hydro work. It is a source of pride to the members of the Commission that their working forces are readily interchangeable and can be transferred to any one of the three other departments when necessary.

The present population of Whitby is officially recorded at 6,699. There are several thriving manufacturing plants in the town turning out products such as brass buckles, iron mouldings, leather goods, jewellery boxes, woollen goods, boys, clothing, insulating materials, canned goods and lumber. The town is the site of the Ontario Ladies College, known across Canada as one of the finest schools of its type, and is also the location of one of the Provincial Government's largest and best equipped hospitals.

Port Whitby, the southernmost part of the town, has one of the finest natural harbours on Lake Ontario. The concrete wharves provide excellent facilities for the unloading of coal, gasoline and lumber, and a large Canadian oil company has located several of its huge storage tanks adjacent to the harbour.

From that brief resume of Whitby's expansion through the years it is readily seen that the community has not been content to stand still but has continued to move steadily ahead. In that respect the completion and inauguration of its new Public Utilities Commission Building is an impressive testimonial to a progressive municipality.



HERBERT C. PRINGLE

SUPERINTENDENT AT WHITBY

★

HERBERT C. PRINGLE, Superintendent of the Whitby Public Utilities Commission, is a native of that community having arrived there on April 5, 1885. He received his early education at local schools before setting out for the University of Toronto where he graduated in civil engineering. During World War One Mr. Pringle served with the Canadian Army in 1917 and 1918. He has been Town Engineer for his home town since 1925, and for the past 16 years has held the office of Superintendent of the Public Utilities Commission. In his leisure hours he divides his time between the Lakeshore Gun Club and the Whitby Lawn Bowling Club. Mr. Pringle is married and the father of one daughter.

PIONEER DIES

JOHN MURPHY, distinguished pioneer in the field of hydro-electric development, died in Ottawa recently in his 82nd year.

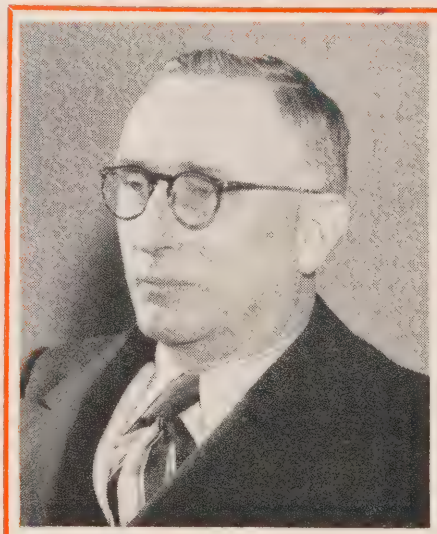
D. A. McKENZIE DIES

DANIEL A. McKENZIE, formerly of the H.E.P.C. Operations Division, died recently at his home in Toronto.

Mr. McKenzie had been on the Commission's staff for 37 years. Born near Strathroy, he spent his childhood in Western Canada, graduated in Engineering from the University of Toronto in 1912, and immediately joined the Hydro staff.

He was a member of the Canadian Club, The American Institute of Electrical Engineers, the Institute of Electrical Engineers of England, and the Association of Professional Engineers of Ontario. He took a keen interest in sports and for 36 years was a member of the Y.M.C.A., where he was a noted handball player. In his student days he was an enthusiastic boxer and wrestler.

Surviving are his widow, the former Florence MacNair; a son, Donald of Toronto; a sister and two brothers.



WILLIAM DAVIDSON

MAYOR OF WHITBY ELECTED IN 1946

★

WILLIAM DAVIDSON, Mayor of Whitby, was born in Guelph, Ontario, on December 2, 1889. He is married and the father of a son and a daughter. His record of public service began in 1923 and he served for 15 years on the Town Council, the Public Utilities Commission and the School Board. In 1946 he was elected to the office of Mayor and has served in that post up to the present time. Mr. Davidson is a Past President of the Whitby Chamber of Commerce, a member of the Whitby Rotary Club and District Deputy Grand Master of Ontario District of the Masonic Order.

OPERATION MANITOULIN

(Continued from page 9)

and composed of three wires sealed in lead and covered with heavy wire armour.

A new substation consisting of three two-and-a-half-ton transformers has been installed on the north shore of the channel just east of the bridge to the island. Its function will be to step down the voltage to 12,000/6,900 volts to connect to the cable which serves the Manitoulin consumers. The substation is a temporary one and will be replaced by a new station, located in close proximity to the C.P.R. station at Little Current, as soon as steel for overhead towers is available.

A new transmission line, carrying 45,000 volts, will serve Manitoulin with power generated from the Wabagishik Generating Station of the International Nickel Company, and purchased by The Hydro-Electric Power Commission of Ontario under a special contract agreement. At Whitefish Falls the power is taken from the Inco line and then transmitted over 20 miles of newly-constructed Hydro line to the substation at Little Current. Due to the rugged nature of the terrain, extensive use of dynamite was necessary to build the line and the majority of the poles had to be set in rock.

Construction of the line was undertaken jointly by the Construction Department and the Operating Division of the Northeastern Region. This work was done under the supervision of Alex Duffy of the Northeastern Region and John Duncan and Jack Hamilton of the Construction Department. The line construction began early in August when two camps were established, one at McGregor Bay and the other at Whitefish Falls.

Manitoulin Island has now approximately 285 miles of line serving 2,000 consumers. About 140 miles of line have been added during the past two years and construction crews are currently extending this total.



FREDERICK T. ROWE

DEPUTY CHAIRMAN

FREDERICK THOMAS ROWE was born in Whitby Township on January 6, 1873. He has a long and distinguished record in civic affairs in his native town, dating from 1911 when he was elected to the Whitby Township Council. He served as Councillor for 11 years and Reeve for five years before retiring in 1927. In 1929 he was elected to the Whitby Town Council, subsequently serving three years as Councillor, three years Deputy Reeve, two years as Reeve and seven years as Mayor. At the present time he is Deputy Chairman of the Public Utilities Commission. He is married and has one son.

SUB-COLLECTION AGENCIES POPULAR WITH CONSUMERS

Sub-collection agencies continue to be popular with customers of the Sudbury Hydro-Electric Commission, with the city hall at the head of the list.



WILLIAM H. PRINGLE

WHITBY CHAIRMAN NATIVE OF TOWN

★

WILLIAM H. PRINGLE, no relation to Herbert C. Pringle, is the Chairman of the Whitby Public Utilities Commission. However, in common with his namesake, Whitby is his home town as he was added to the census there on October 7, 1875. He received his education at the Whitby Public and High Schools before entering business. Married and the father of a son, Mr. Pringle has long been active in civic affairs. He has served for 22 years as a Hydro Commissioner, four of these as Chairman. In addition he has served for five years on the Town Council. Mr. Pringle is a Past President of the Whitby Rotary Club and his main hobby is turning his hand to home carpentry.

CHRISTMAS GREETINGS

(Continued from page 12)

of processes have been used for card manufacture, lithography has remained the most popular. And lithography itself has come a long way since the time of Henry Cole. Today, huge electrically driven presses roll off thousands of sheets of paper an hour, each sheet composed of designs for ten to twenty cards. Replacing the old-fashioned colouring by hand, coloured as well as black ink is incorporated in the press, so that pictures and lettering can be printed at the same time.

In the making of plates, too, Hydro power plays an important role. Electric light for photo-engraving, power-driven plate-sensitizing machines, not to mention electric folders and cutters, all have improved and speeded up the card-manufacturing process. Even the decoration of cards with artificial snow is now done electrically, as is shown in one of the photographs accompanying this article.

The number of Christmas cards produced annually runs well into the millions —a far cry from the slow laborious production of Henry Cole's original thousand. In improving manufacturing processes, and making possible mass production, Hydro has rendered an invaluable service to all makers and buyers of Christmas cards.

COMMISSIONER

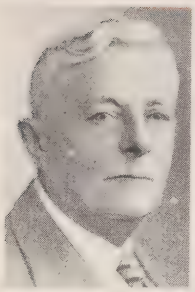
JAMES ROSS is a native of the Old Country, born in Inverurie, Aberdeenshire, Scotland. He received his education there and later served for three and a half years with the Imperial Army in the First World War. He has been a Commissioner of the Whitby Public Utilities Commission since 1945. He is active in the work of the Canadian Legion and is also a member of the Whitby Lawn Bowling Club. Mr. Ross is married and has one daughter.



JAMES ROSS

Biette Retirement Marked By Venison Dinner

Served On Chatham P.U.C. 23 Years—Recipient Of Presentations—"Smoky" Reynolds Brings Home Deer



RECENTLY R. S. "Smoky" Reynolds, the genial, athletic Manager and Secretary of the Chatham Public Utilities Commission headed into the Ottawa Valley with a party of friends, all being armed with guns.

The result of that expedition was revealed in the hall of the P.U.C., on Queen Street, on December 1, when more than 100 employees, their wives and friends enjoyed venison steaks.

Mr. Reynolds inaugurated this happy annual event 15 years ago.

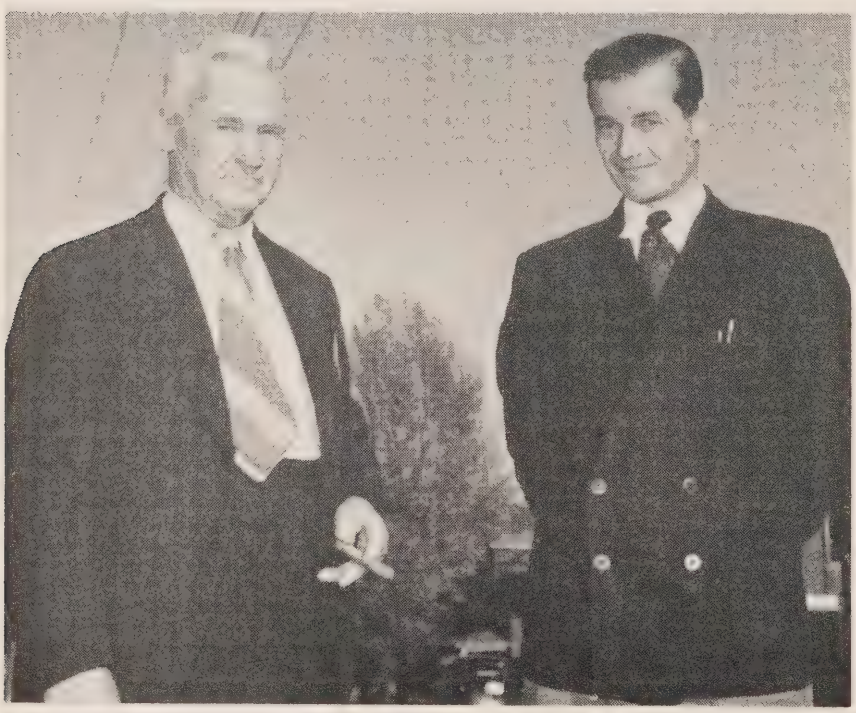
This year's dinner was a very special occasion in that members of the Commission and staff joined in expressions of warm and affectionate tribute to Fred Biette who is retiring after having served continuously for 23 years on the Chatham P.U.C. For a number of these years he held the position of Chairman. Mayor R. D. Steele, the present Chairman, Stanley Thomson, the other Commissioner, Mr. Reynolds and other speakers joined with Bob Draper, Chairman of the Social Committee, in eulogizing Mr. Biette's distinguished career of public service.

An illuminated address and a smoking jacket were presented by Mr. Draper, on behalf of the Commission and employees, to Mr. Biette who made gracious acknowledgment.

For many years Mr. Biette served on the executive of the O.M.E.A. and played a prominent part in furthering the interests of various municipalities throughout the province.

He was born at Newcastle, Ontario, in 1866, and was associated with the banking business for over 40 years.

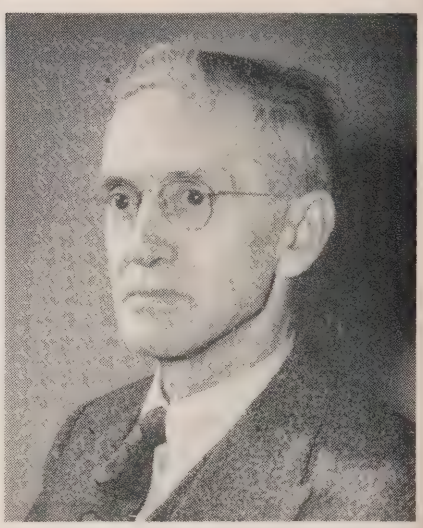
North Bay Changes Hydro Managers



SUCCEEDING WILLIAM R. Stewart, above, left, whose "power" career in North Bay extends back over the past 43 years, Stuart R. Walkinshaw, right, has assumed the position of Manager of the North Bay Hydro-Electric Commission. A member of the Association of Professional Engineers of Ontario, Mr. Stewart first became associated with the development of hydro-electric power in the northern city as a helper with the old North Bay Light, Heat and Power Company. He was Manager of the North Bay Commission from 1944 until his official retirement in October. Mr. Walkinshaw, who has been Assistant Manager at North Bay for the past three years, was born at New Liskeard on July 29, 1912. Following graduation from the University of Toronto, Mr. Walkinshaw became identified with the Commission. During the war he served with the R.C.N. from 1943 to 1945. He is a member of the Association of Professional Engineers of Ontario and North Bay Rotary Club. Married, he has one son and one daughter.

COMMISSIONER

DAVID MOWAT, Commissioner of the Whitby Public Utilities Commission, was born in Whitby in 1889. He is married and the father of two daughters. During World War One he served overseas with 116th Battalion from 1914 to 1918. He has served on the Commission since 1944, and in 1924, 1927 and 1928 was a member of the Whitby Town Council. In his leisure moments he is an enthusiastic baseball and hockey fan.



DAVID MOWAT

HAMILTON

(Continued from page 4)

pounds of steam per hour at 400 pounds PSIG—750°F. The four furnaces have automatic stokers and will consume fuel at the rate of 180 tons per day. Every care is being taken to eliminate the dust and smoke nuisance.

Bituminous coal will be transported to the station by truck from a Hamilton wharf, where it was stored during the summer. The coal is crushed and carried into the building by elevator and conveyor belt. There, it will be deposited in bins above the steam generators. Distilled water is converted into steam which, in turn, is fed at high pressure into turbine generators delivering power at 6,600 volts.

SCARBORO

(Continued from page 5)

steam units in operation in the Scott Street station of the Toronto Street Railway.

Power from the new plant will be fed directly, via underground cables, into the Toronto-Gerrard substation of the Toronto Hydro-Electric System. The output may also be utilized in connection with the construction of the Toronto project "next door" in the fall of 1950.

HYDRO at the Royal











THRONGS OF visitors, hundreds of exhibitors and a week of interesting competitions and events were among the many varied features of the 21st annual Royal Agricultural Winter Fair in Toronto this year. Crowding the ring, upper left, were six-horse teams bearing flowers and vegetables, members of the Royal Canadian Mounted Police astride some of the finest specimens of the equine world in their famous musical ride and the riding teams of Canada, Chile, Mexico and Ireland. Six world champion farmers had grain trophies to show after the fair. Championships in beef and dairy cattle, sheep and swine were fairly evenly distributed across Canada. A host of other grand champions were awarded for entries ranging from rabbits to tropical fish. Hydro's exhibit at the world's largest agricultural fair included displays showing practically every phase of the Commission's present activities including extension of rural services, the frequency conversion program as well as significant example of the half-billion dollar postwar expansion program.

Humberstone

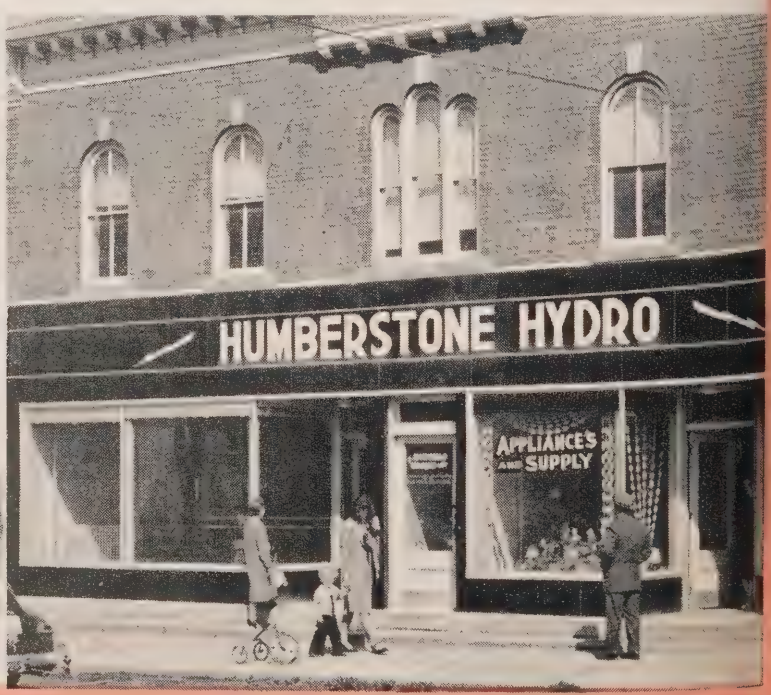


ONE OF the most important waterways in the world — the Welland Canal — shown above, passes through the heart of the Village. Vessel in foreground is in Lock No. 8, last lock in the canal, reported to be one of the longest canal locks in the world.

BELOW LEFT—Bridge across old Welland Canal in business section of Humberstone which is bisected by waterways.



BELOW RIGHT—Humberstone Hydro Commission has its headquarters in one of the most modern Hydro buildings of any community of its size in Ontario.



ON the banks of the Welland Ship Canal, near the shores of Lake Erie, lies the picturesque Village of Humberstone. It is a community richly steeped in the history of the Niagara area and rapidly is becoming one of the important industrial centres of the district.

Humberstone, once a sleepy little agricultural community, now is pulsating with activity. It is growing into what might be termed the "shoe industry capital" of Canada. Indeed, this village boasts four shoe factories, one of which, the Humberstone Shoe Company, is claimed by the management to have the largest shoe production in the Dominion.

Bisecting the heart of the community is one of the most important waterways in the world — the Welland Canal. Into this great ship channel linking Lakes Erie and Ontario, steam huge grain carriers and other freight vessels. Many of the former disgorge their big cargoes of golden grain from Canada's midwest into the giant elevators of granaries and flour mills bordering Humberstone. And at this point in the canal, right in the centre of Humberstone village, is one of the longest canal locks in the world. It is Lock No. 8, the last lock in the canal, and is 1,380 feet long by 80 feet wide. This lock is capable of accommodating as many as three freighters at a time.

Incorporated as a village in 1912, Humberstone became affiliated with Hydro in 1923. The Humberstone Hydro-Electric Commission had an initial load of 115 kilowatts (150 hp) and serviced 200 consumers. Today there are approximately 1,000 consumers, divided among 869 domestic, 116 commercial

(Continued on page 21)



ABOVE—Nellis McCann, superintendent, and George Varmeshon, local lineman, talk over plans for the day's work.

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LEFT—Humberstone is proud of this attractive public school.



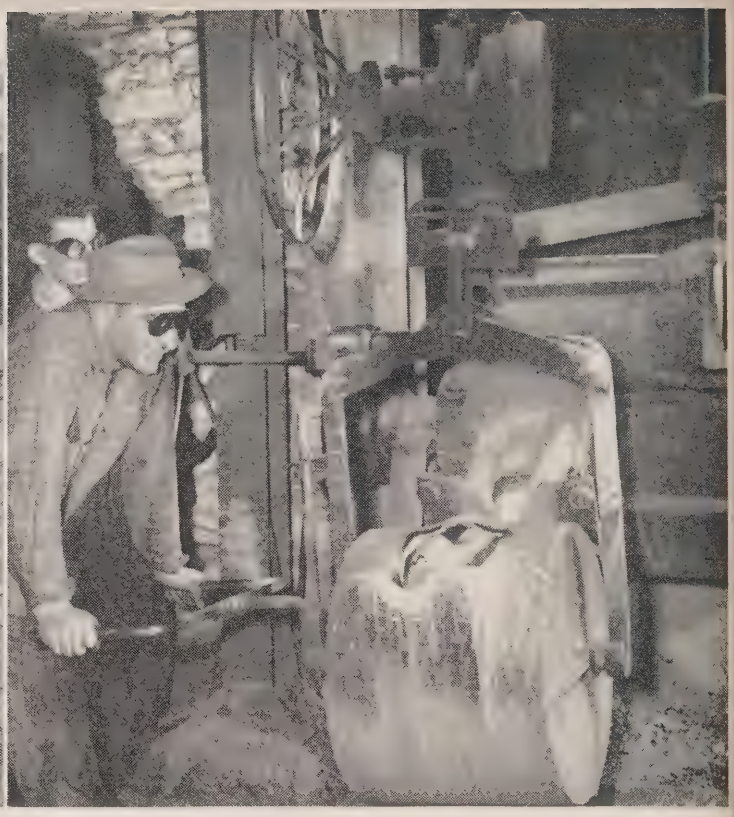


by

C. G. W. Macintosh
Hydro News



ABOVE LEFT—First industry to receive electric power in Humberstone was the lumber mill operated by W. Reichman & Sons. The mill is located in the historic, old stone building that once served as a barracks for Canadian troops during the Fenian Raid.



ABOVE RIGHT—An important user of power at Humberstone is the Lakeside Foundries. The cameraman caught an interesting operation as molten iron was being poured from the furnace into a big ladle.



BELOW—Typical meeting of the Humberstone Hydro Commission. Seated, left to right: Miss Edna Goss, Secretary-Treasurer; Nellis McCann, Superintendent; Reeve Howard Naish, a Commissioner; Jason S. Sherk, Chairman, and William G. Reeb, Commissioner.



HUMBERSTONE

(Continued from page 19)

and 15 industrial users. The load at present in 609 kilowatts (812 hp).

New Building Acquired

Until July 1 last year, the Humberstone Hydro-Electric Commission was housed in the municipal building. But its needs far outgrew the space available there, and the local commission wisely decided to obtain new accommodation for more efficient operation. A large building almost directly across the street from the town hall was purchased and renovated.

Today, the Humberstone Commission can boast of having one of the most modern Hydro buildings of any community of its size in the province. It includes a spacious business office, well lighted and ventilated; a board room where the commission meets; a large meter room, and a big repair and storage room. In the rear section of the building, a large garage houses the Commission's modern truck. There is also a spacious room for the heating plant. Part of the building is rented to an electrical supply dealer and the second storey has been made into up-to-date offices which are to be rented.

The staff of the local commission is small but efficient. Nellis McCann is Superintendent and Miss Edna Goss is Secretary-Treasurer. The former has been with the Humberstone Hydro since 1942, serving in the capacity of superintendent. Miss Goss assumed the duties of secretary-treasurer when the move was made to the new building last July. Prior to that Wilford Pietz, the municipal clerk, also acted as the local Hydro's secretary-treasurer. McCann has an able assistant in George Varmeshon, a lineman who has been with the Commission for the past six years.

Present chairman of the Humberstone Hydro-Electric Commission is Jason S. Sherk, who has served since its inception 26 years ago. He has been chairman several times during that period. The other two commissioners are Reeve Howard Naish, who has been a member of the commission for four years and William G. Reeb, who has served for two years.

One time known as the hamlet of "Petersburg" and also "Stonebridge," the village subsequently received the name of Humberstone. Before the construction of the canal, a creek passed through the site of this village, and the settlers, to effect a crossing, sank stones in the water. The place was called "Stonebridge" in consequence and immediately after the first canal was built in 1829 an active community sprang up at this point. Humberstone Village derived its official name from the Township of Humberstone, the latter having been named by Governor Simcoe.

The village is situated about one mile north of Lake Erie, and the town of Port Colborne. Both municipalities were started as a result of the building of the first Welland Canal.

In the early days, when the first canal was built, Humberstone was larger and more important than its sister community, Port Colborne. But the enlargement of the harbour at Port Colborne about the year 1850, and its better railway facilities, gave that village an impetus that made it outrival the sister village down the canal. Both have grown until it now seems like one continuous town from Humberstone to Lake Erie. Humberstone today has a population of 3,412 citizens.

Fourth Welland Canal

The Welland Canal which passes through the centre of Humberstone has been rebuilt three times, the present waterway being known as the Fourth Welland Canal. The first canal was completed in 1829. It was reported that on the 29th of November, 1829, the first two vessels decorated with flags and cheered by hundreds passed through the canal and through Humberstone on the way from Lake Ontario to Lake Erie. Subsequently, the canal was rebuilt in 1845, in 1888, and the present canal in 1930.

The first industry to receive electric power in Humberstone was the lumber mill operated by W. Reichman and Sons located in the historic, old stone building that once served as a barracks for the Canadian troops during the Fenian Raid in 1866. With the advent of electricity, industry started to flourish in the village, which now has four shoe plants, two of which house the Humberstone Shoe Company. The other shoe factories are the Knoll Shoe Company and the Erie Shoe Company. Other industries and important users of power include the Lakeside Foundries and the boiler making and iron works plant operated by H. E. Heighton & Sons.

Humberstone was originally settled by United Empire Loyalists who left the United States during the American Revolution. The earliest record of pioneer settlers indicates that Christian Stoner in 1781 removed his family from his home along the banks of the Susquehanna in Pennsylvania and came to the Hum-

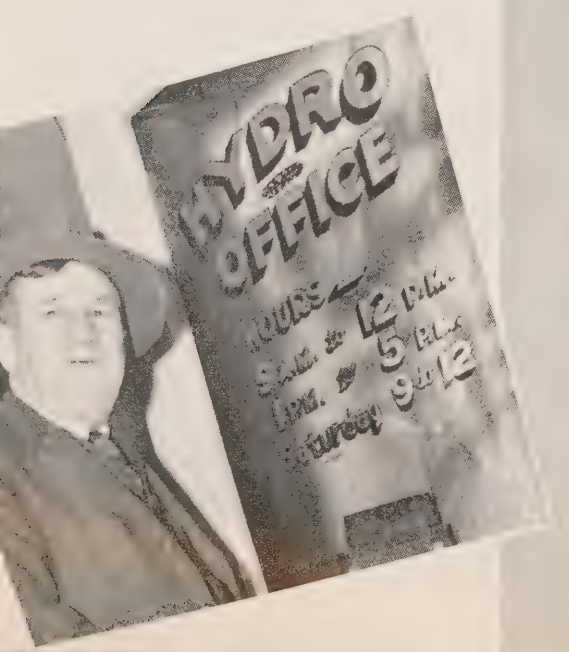


PASSERS-BY IN Toronto's downtown street area were attracted recently by the Toronto Hydro's tastefully decorated window featuring Hydro long-life lamps. In their newly-designed green and white cartons, each containing four 1500-hour lamps, bulbs are more easily stored. New carton is designed for easier carrying as well as eye-appeal.

berstone area. Mr. Stoner and his family were accompanied by Abraham Neff and Christian Knisley and their families. Other United Empire loyalists who came to the Humberstone District about the time of the close of the American Revolution included: William Steele, John Near, Daniel Knisley, Michael Sherk and George Zavitz. These are familiar family names in the area today, the numerous progeny of the above-mentioned pioneers owning land and still residing in the Humberstone area.

Many prominent persons have claimed Humberstone as their "home town." Among these are Professor Ziegfeld, noted organist, and father of Florenz Ziegfeld, originator of the musical comedies that bore his name. Florenz, known in the musical world as "Flo," was born in Humberstone. Others who hailed from Humberstone included Norman Hesler, noted educator who became president of Dalhousie University in New Brunswick; his brother, Harold, who became vice-president of the Royal Bank of Canada, and Charles Mosher, prominent builder, who constructed the beautiful Delaware Avenue Cathedral in Buffalo, New York.

Growth of Humberstone has been rapid during the past decade. Those who reside there are confident that this village, so rich in the history of the Niagara area, has an important future and is destined to make a still greater contribution to the economic and industrial life of Canada.



BELOW—Former reeve of Humberstone and Hydro Commissioner for 18 years, Herbert Appleyard has been actively identified with the affairs of the Humberstone Commission.



ABOVE—This big shearing machine at the plant of H. E. Heighton & Son, boilermakers, at Humberstone, cuts one-inch plate quickly and efficiently.

BELOW—Four shoe factories in Humberstone are important consumers of electric power. This photograph was taken at the plant of the Erie Shoe Company.



HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



Photo courtesy Robt. Simpson Co. Ltd.

Christmas is the time to try your creative ideas. Use some simple materials such as you might find in the box where you packed odds and ends of Christmas decorations left over from last year—or a few last minute shopping treats. An apple tree branch, dipped in boiled starch then sprinkled with tinsel, festooned with coloured "Life Savers", cellophane bows and tiny candy canes makes a pretty centre piece.

For the mantel, twigs (dipped in starch, then mica) may be taped together and pushed into a steel "frog" or flower holder of wire. Place a few greens to hide base of tree and arrange a couple of white reindeer to complete this winter scene.

* * *

Egg cups make useful candleholders for a large family table. Light one and drip a little soft wax into the bottom of each cup, then place candles in firmly.

* * *

The relish tray may be prepared early if you wish. Prepare and place the raw vegetables on a sectional plate then cover snugly with oilsilk cover or cellophane and store in a cold place. Do not keep carrot sticks, radish roses and turnip slivers in water as it drains out the flavour.

* * *

With a package of roll mix you'll be ever so popular. You can sprinkle the dough with cardamom seed or slivered watermelon pickle then knead and fashion into a circle for a pretty wreath design.

* * *

Breakfast is usually late Christmas morning. Kinfolk go home for the holiday looking forward to a leisurely breakfast which will include some of the favourite food they've missed. Perhaps these suggestions will help if you are busy with dinner preparations—cooked ham cut in ½ inch cubes will keep hot and moist in the juice in which it has been boiled. Cut orange into segments with rind left on; keep sugar-coated cinnamon rolls hot in a wet paper bag in the warming oven. Coffee made in the electric percolator and wrapped with a heavy towel will keep hot in this way.

* * *

To serve a refreshing appetizer at dinner, pour a can of fruit cocktail mix (or a jar of your own fruit salad), in the freezing tray of the refrigerator one hour before mealtime. When the fruit cup comes to the table the juice is icy and the fruit tingling cold. A drop of mint flavouring adds an extra touch.

TIME TABLE FOR ROASTING

Oven temperature: 325 degrees.

Roast to 180 degrees in centre of dressing with meat thermometer for poultry.

If bird is taken directly from refrigerator, increase the cooking period about 30 minutes.

Stuffed weight of a bird is about the same as that in which feathers only are removed.

Chicken—4 lbs. stuffed—2½ hrs.; 6 lbs. stuffed—3 hrs.

Duck, Turkey or Goose—8 lbs. stuffed—2½ hrs.; 12 lbs. stuffed—3 hrs.; 14-16 lbs. stuffed—3½ hrs.; 18 lbs. stuffed—4¼ hrs.; 20 lbs. stuffed—4½ hrs.

A teaspoon of chives tossed over plain boiled potatoes is a nice change for the day.

* * *

Heat peas in their liquid and fill boiled onion rings for the festive meal. Centres of onion may be taken out previously for the dressing.

* * *

Salad note: Shred the cabbage and mix with cubes of pineapple in the morning. Cover and place in the refrigerator. It will be crisp and fresh when you are ready to use it. Pour sour cream dressing over the salad before serving.

* * *

To make sour cream, add a tablespoon of vinegar to a cup of cream and let it stand in a warm place for about 20 minutes.

A good coating of paste wax on the grooves of the bridge chairs you find sticking will make them slide easily.

* * *

To make coffee go further use a level teaspoon per cup of water and one for the pot, a quarter teaspoon mustard and a sprinkle of salt. Steep the coffee in a little cold water first then pour into percolator cup or top of vacuum maker.

* * *

To prevent a soggy pumpkin or mince pie, brush the inside of an unbaked crust with egg white before pouring the filling into it.

* * *

A fresh cake for Christmas eve may be quickly baked in your pressure cooker using one of the new packaged mixes—baked without the indicator weight on. You may use a large aluminum jelly mold if none of the square pans fit the cooker. Line with aluminum foil and grease slightly.

* * *

Mock almond paste for the fruit cake: Scrub 3 sweet potatoes and bake, scoop out centres, sieve and measure 1 cup mashed potatoes and mix well with 2 pounds icing sugar, pinch of salt and 1 teaspoon almond flavouring. Add more icing sugar if necessary.

* * *

Be sure to use a hot knife to cut fruit cake.

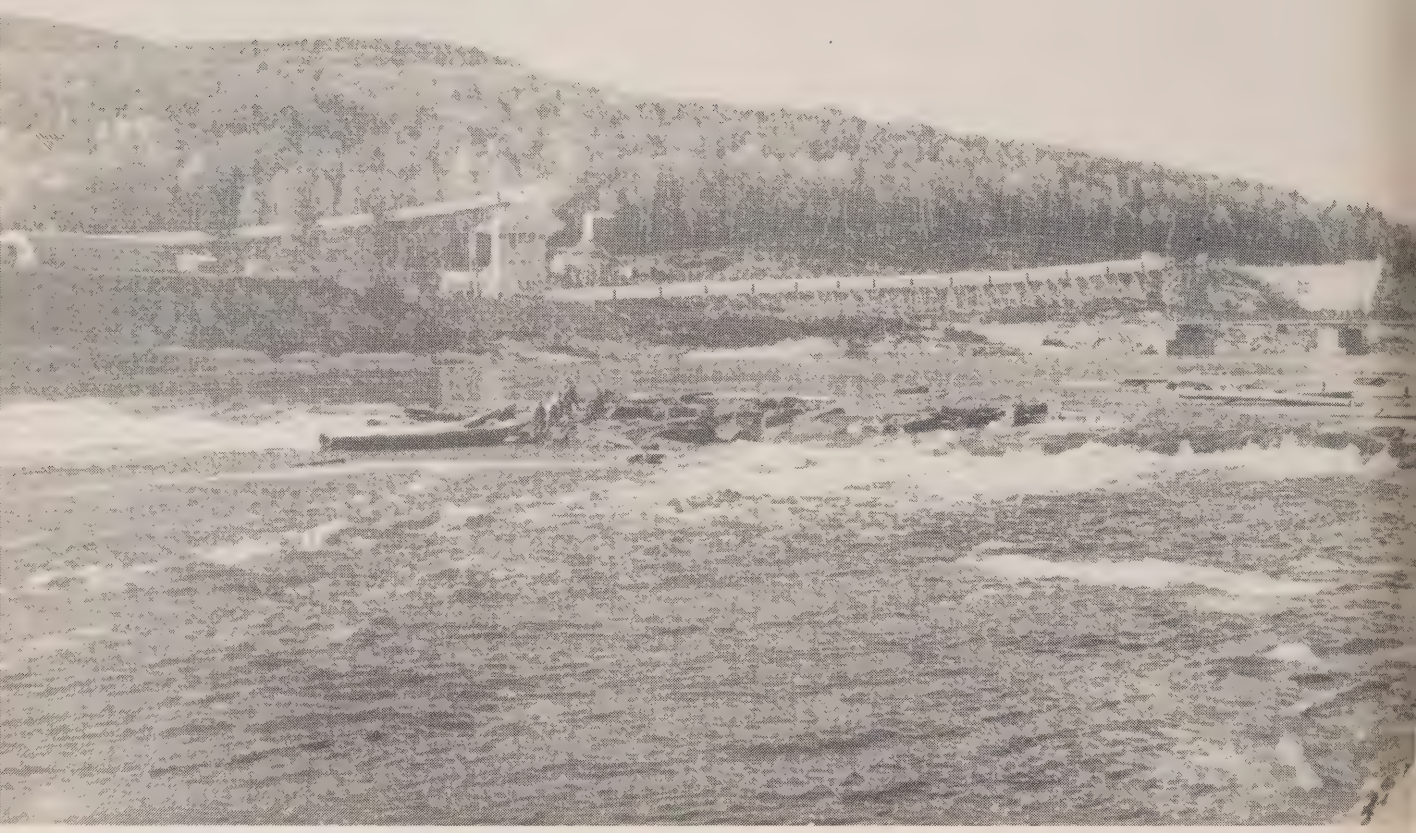
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Allow 1 hour for reheating steam pudding and serve with hard sauce made of butter and icing sugar as a thick paste and flavoured with maraschino cherry juice.

* * *

Festive sandwiches for midnight snack! Spread hot mincemeat between buttered slices of whole wheat bread. Toast lightly on both sides under hot broiling element. Serve with small pieces of cream cheese, and a cup of cafe au lait, that is half hot milk and half hot coffee. Then join with us in saying, "A Merry Christmas to all, and to all a good night."

LA CAVE



SWIRLING WATERS of the Ottawa River will soon be tamed to produce 144,000 kilowatts of electric energy. Beginning of dam is seen at right.

"THE shape of things to come" is becoming increasingly evident at the site of Hydro's youngest Ottawa River power development, LaCave.

With the beginning of concrete pouring for the main dam, which commenced about the middle of October, the project is now starting to take shape and to emerge from the blueprint stage to a full-fledged Hydro development.

Although active construction on the 144,000 kilowatt (192,000-hp) project did not get under way until January of this year, preliminary surveys were conducted and a certain amount of diamond drilling carried on in the late summer and fall of 1948. This plant, located about five miles north of the village of Mattawa and 65 miles upstream from its big sister, Des Joachims, is expected to commence delivery of power from its six units in 1952.

Because of its unique location, LaCave will be in a position to deliver power to both the Southern Ontario and the Northeastern Ontario Systems. Present plans call for a 230-kv transmission line to be constructed between LaCave and Des Joachims, through which power will go to the former system. In addition,

by
Edith B. Kent
Hydro News

step-down transformer facilities will be built at LaCave which will provide for power to be delivered at 115 kv to Sudbury.

Diversion Channel

First major step in the construction of the development was excavation for the diversion channel. Located on the east, or Quebec, shore of the river, and crossed by an access bridge of Bailey construction, the channel will be used to pass the flow of the Ottawa while work is going on at the powerhouse site. This excavation was begun in April of this year, and at the time of Hydro News' visit, in mid-October, almost all of the estimated total of 692,000 cubic yards of excavation, mostly rock, had been removed from the channel. Next stage in the diversion, the construction of formwork for piers for the diversion sluices, was well under way.



With the erection of a portion of the wooden formwork, construction had begun on the main dam, which, including some 1,240 feet of sluiceways, will stretch a distance of 2,600 feet across the river. As is the case at most Hydro developments, the dam will incorporate the powerhouse, and will be built of mass and reinforced concrete. Approximately 370,000 cubic yards of concrete will be required to complete the job, necessitating the screening and crushing of about 600,000 tons of aggregate. Sufficient for 160,000 cubic yards, or about 45 per cent of the total, had been screened and crushed to October 1, and operations were expected to continue until freeze-up.

Concrete Aggregate

A singular operation in the production of concrete aggregate was the laying of

(Continued on page 26)



CONSTRUCTION CAMP at La Cave (left), showing some of the accommodation buildings at right and aggregate stockpiles at left.

WOODEN FORMWORK for diversion sluice sill under construction, below. Form will be filled with concrete, later removed.





UARRY-MASTERS bite into rock and earth site of diversion channel (above). Much rock excavated (totalling about 692,000 bic yards) will be used for aggregate.

CCESS BRIDGE, of Bailey construction, ans Ottawa River a little below main dam e. In foreground is aggregate conveyor; background the Quebec construction camp.



LA CAVE

(Continued from page 24)

a 1,160-foot reclaiming tunnel to house the aggregate conveyor belt. Built to run under the stockpiles, the tunnel provides openings through which the required amount of each kind of gravel or sand may drop to the conveyor belt, which in turn carries it to the concrete mixing plant.

Smilingly termed the "Chateau Frontenac" by those on the job, the mixing plant has been set up on the Ontario side of the river, and is now producing concrete at the rate of 120 cubic yards an hour.

Re-location of Line

It is expected that work will begin shortly on the relocation of 37½ miles of C.P.R. line, in connection with the LaCave project. This relocation is necessitated by the fact that the site of the present line will eventually form part of the 12,000-acre area which will act as forebay for the development. Also necessary, for the same reason, will be the diversion of three miles of Highway No. 63 which runs between North Bay and the town of Temiskaming, Quebec.

The artificial lake formed by the erection of the dam will extend 30 miles upstream and will be about half a mile wide. The water level will be raised about 70 feet above the present level, to create an operating head at the plant of 75 feet.

Besides the clearing of land for the forebay, a considerable amount of tree-chopping and grading was essential for the erection of the camp. At present housing about 1,500 men, in addition to many of their families, the camp includes comfortable bunkhouses, staff houses, a well-stocked commissary, cafeteria and recreation facilities.

Riverside Drive

In a picturesque setting amid the trees on the Ontario bank of the river, rows of neat white houses make up "Riverside Drive," inhabited by staff members and their families. Farther back from the river, a small colony of comfortable homes for workers engaged on the project has been set up, replacing in part the trailer camp which originally housed a number of the workers.

Appetizing meals are served in the light, airy cafeteria by young ladies who are specially selected and trained for their job. Recently a recreation association was organized to look after such diversions as seasonal sports, bowling, pool, movies and dances.

All in all, satisfactory progress is evinced in every phase of the LaCave development, which, when completed, will constitute the first step towards an ultimate goal whereby, through the tie-ins of a closely knit grid system, Hydro power will be interchangeable throughout Ontario.

U.S. EXPANSION PROGRAM

• In a recent announcement, Elmer L. Lindseth, President of the Edison Electric Institute and the Cleveland Electric Illuminating Company, stated that the electric light and power companies in the United States would spend $2 billion in their expansion program this year.

Drive Last Spike On Diverted C.P.R. Line



LAST SPIKE in the diverted C.P.R. line between Mattawa and Des Joachims was driven during a recent ceremony attended by representatives of the Commission and the Canadian Pacific Railway. The 10-mile rail project, one of the two diversions necessary to place the C.P.R. line above the forebay level of the Des Joachims development, required actually only four months to complete. Angus Richardson, Project Manager at Des Joachims, is shown hammering home the symbolic "golden spike" to officially complete the new rail diversion. Hydro and C.P.R. representatives who attended the ceremony are in the background.

This and That

by

The Editor

AND so, it's Christmas again — a time when we not only send our warmest wishes to all our readers, but a time when we take a good, hefty swing at the typewriter keys and do a little soul searching, as it were. You know, once in a while, it's a good thing to let your hair down — even if it is getting a little thin.

In the first place, let no one get the idea that this is a high-sounding lecture on morals and conduct. We dislike such lectures, especially if they are delivered by individuals whose philosophy of life is: "Do as I say but not as I do." However, we do hope that we will always have time to listen to, and learn from these people whose deeds and lives are worthy of emulation.

To get away on the right note, we believe that we are all subject to the same emotions and influence, but in varying degrees, according to our background, will-power and conscience. We, the people, live in a world in which good and evil are in constant conflict and we, the people, are responsible for both the good and the evil.

It's an old story. A street is a nice street, even if it be in a poor area, as long as there are nice people living on that street. And a community is only as good as the people who live in that community. And the same yardstick can be applied to the nation and the world at large.

It's Christmas and a time when we should ponder these things.

And we should also ponder the plight of the millions of people behind the Iron Curtain . . . and, yes, in other countries. One of the great tragedies of this life is that certain people, by virtue of their high estate and the all-encompassing power they exercise, are in a position to force their ideas and ideologies upon their fellow men to the point where it is a choice between bread and principle. In many instances, the men who adhere to their principles are "liquidated." And yet, the lives and deeds of these men who died that their principles might live, will be a shining light which no man, regardless of his material power, can extinguish.

It's Christmas and a time when we should ponder these things.

And as we ponder, would it not be well if we were all to take time out to review our own lives and deeds during the past year? Are we all satisfied that we made a sincere and honest effort to meet evil with good? Are we happy about the way in which we conducted ourselves in relation to our friends and business colleagues? True, we have all made mistakes. We are human, but have we tried sincerely and conscientiously to avoid causing harm and unhappiness to others?

It's Christmas and a time when we should ponder these things.

When clothes become soiled we send them to the laundry and — if it's a reliable laundry — these clothes will come back clean and sweet-smelling. To take a very practical and realistic view of this business of life and living, doesn't it seem logical that our souls might be sent to the laundry once in a while? And, wouldn't Christmas be a good time to perform this task?

Send the soul to the laundry? True, we couldn't make much use of soap and water in cleaning up the soul . . . and if we could, some of our souls would still look rather soiled, even if we used an electric washing machine!

Each one will have his or her own conception of what steps should be taken in order to send a soul to the laundry. We have our own idea and it doesn't involve packing some rather nebulous object into a bag and phoning our cleaner and presser.

A much more effective manner in handling this situation would be to find a quiet room where we cannot be disturbed, and we should remember that the principle of Power Action can be just as helpful to human beings as it is on cars.

During our meditations in that quiet room we should recall those things which we did and should have done and vice versa. We should examine thoroughly all these obstacles which are holding us back and determine how best they can be removed. In other words, part of our mission will be a searching of our own soul.

And perhaps, as we meditate in that room, we may at least catch a glimpse of the over-all picture of this world of men. Perhaps, we may be able to see, in a truer perspective, the pitiful and meaningless strivings of those individuals whose sole yardsticks of success and happiness in life are to attain objectives, regardless of methods, and "keep ahead of the Joneses."

In viewing this picture, one may at last come to a realization that while material things have a definite and important place in life, they offer but an ephemeral or will-o'-the-wisp kind of happiness.

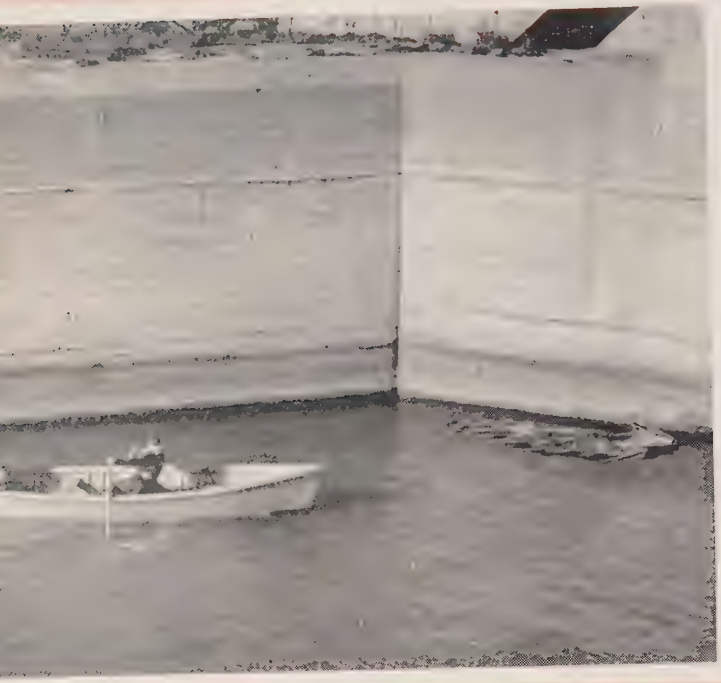
It's Christmas and a time when we should ponder these things.

It is good that Christmas comes . . . to bring its enduring message of hope and goodwill to all mankind . . . to remind us that there is a very vital significance to this season — a significance which transcends the passing joy of giving and receiving gifts, of attending parties and enjoying, in bountiful measure, the good things which are placed upon the table. While all these things are pleasant, they can mean much more when we take time out in the quiet of our rooms to consider why there is such an occasion as Christmas and the meaning of the Christmas Message for one and all.

These are some of the thoughts that came into our mind as we sat down to make a humble effort to interpret in cold print the joy and warmth of this Season of Goodwill. To all members of the great Hydro family, wherever they may be and whatever they may do, go our sincere wishes that they may carry in their hearts throughout the coming year . . . and throughout their journey through life . . . all the blessings and joys of Christmas.

And so, on to the New Year, with hope, faith and courage renewed . . . ready to undertake the great tasks which are ahead, and remembering that each one of us can make a contribution which will help impart a more significant and worthwhile meaning to life.

Deer Rescued From Queenston Forebay





IN SEASON or out, Hydro and Ontario Department of Lands and Forests employees in the Niagara area embark on periodic deer-hunting expeditions. But they hunt their fleet-footed forest friends with boats and ropes—not guns—right in the swift currents of the forebay at the Commission's premier Queenston-Chippawa Generating Station on the Niagara River. In the past two years they have rescued 13 ruminant quadrupeds, bedraggled but still very much alive, from the concrete-walled headpond. These photographs, taken when a 170-pound buck





fell into the power canal in Stamford Township recently, describe, in sequence, a typical rescue operation. Upper left, the two-man rescue-party, clad in life preservers, speeds toward the bewildered beast after its eight-mile swim down the canal. Upper right, lassooed, the deer is towed against the heavy current to the hoisting crane, lower left, where the rescuers tie the legs of the exhausted buck before it is lifted out of the water. Lower right, neatly trussed, the deer is brought up into the power-house through manhole. Later it was released in the woods near station.

Mourn Former Chairman, Commissioner

Hon. Chas. A. Magrath And C. A. Maguire Die In Same Month

WITH the recent passing of Charles Alexander Magrath and Charles Alfred Maguire, Ontario Hydro mourns the loss of two outstanding citizens who were associated with it for several years, on the highest administative level. Mr. Magrath succeeded the late Sir Adam Beck as Chairman of the Commission in September, 1925, continuing in this high office until February, 1931. Mr. Maguire was a member of the Commission from 1925 to 1934. He was the first candidate to be put forward by the Ontario Municipal Electric Association.



Hon. Chas. A. Magrath

Few public appointments occasioned more genuine and widespread interest than that of the new chairman who was called upon to take the place of the "Father of Hydro." Born at North Augusta, Grenville County, Ontario, of Irish forebears, Mr. Magrath had already had a varied and distinguished career. An engineer by profession, he had been employed by the Dominion Government on important geodetic surveys in the North-West. He had represented first the North-West Territories and then the constituency of Medicine Hat in the Federal Parliament and in 1911 had been one of the representatives of the Canadian House of Commons to attend the coronation of King George V. Subsequently he had been named as Chairman of the Canadian Section of the International Joint Commission — the organization administering the Boundary Waters Treaty between Great Britain and the United States. In this latter office his contacts with Hydro had been numerous and his sympathy and admiration for this unique public service organization had always been manifest.



C. A. Maguire

Mr. Maguire, appointed at the same time as Mr. Magrath, was also of Irish descent. His had been a notable record in Toronto, the city of his birth. He had served eight years on the Municipal Council and four more years on the Board of Control. In 1922 he was elected Mayor of Toronto by acclamation for his first term — a unique circumstance in the city's history. In spite of his civic duties and many business activities on an equally important scale — or perhaps because of them — Mr. Maguire had always had time for one hobby. And that was Hydro. Said the London Free Press at the time of his appointment as a member of the Commission: "His selection will have the approval of the municipalities of the province, whose champion he has been on many occasions." The Canadian Engineer said: "His record as a public servant of outstanding ability entitles him to the appointment as third member of the Commission."

While Mr. Magrath was Chairman and Mr. Maguire a member of The Hydro-Electric Power Commission of Ontario, Hydro undertook important programs of consolidation and expansion in both Southern and Northern Ontario, laying in large part the foundations for the tremendous effort Ontario Hydro was enabled to put forth during the Second World War.

Mr. Maguire, who was 74, passed away on October 14 at his home in Toronto. He is survived by his widow, the former Lillian Cusack and a son, Herbert Alfred Maguire. Mr. Magrath died in Victoria, B.C., on October 30, at the advanced age of 89. He is survived by two daughters, Mrs. F. D. Pemberton of Washington, D.C., and Miss Laura Magrath of Victoria, B.C., and by a son, Charles Bolton Magrath of Chicago. Mr. Magrath's wife predeceased him by several years.

In addressing Hydro personnel, Mr. Magrath once remarked: "Integrity is the bedrock of a lasting business."

If this is so, old Hydro friends will be apt to believe that these two worthy servants who have passed beyond "our bourn of time and place" will go on living forever.

Veteran Windsor Hydro Superintendent Retires

OVER 18 centuries of public service in the development of Windsor's Hydro and water systems is the record of 61 employees of Windsor Public Utilities Commission.

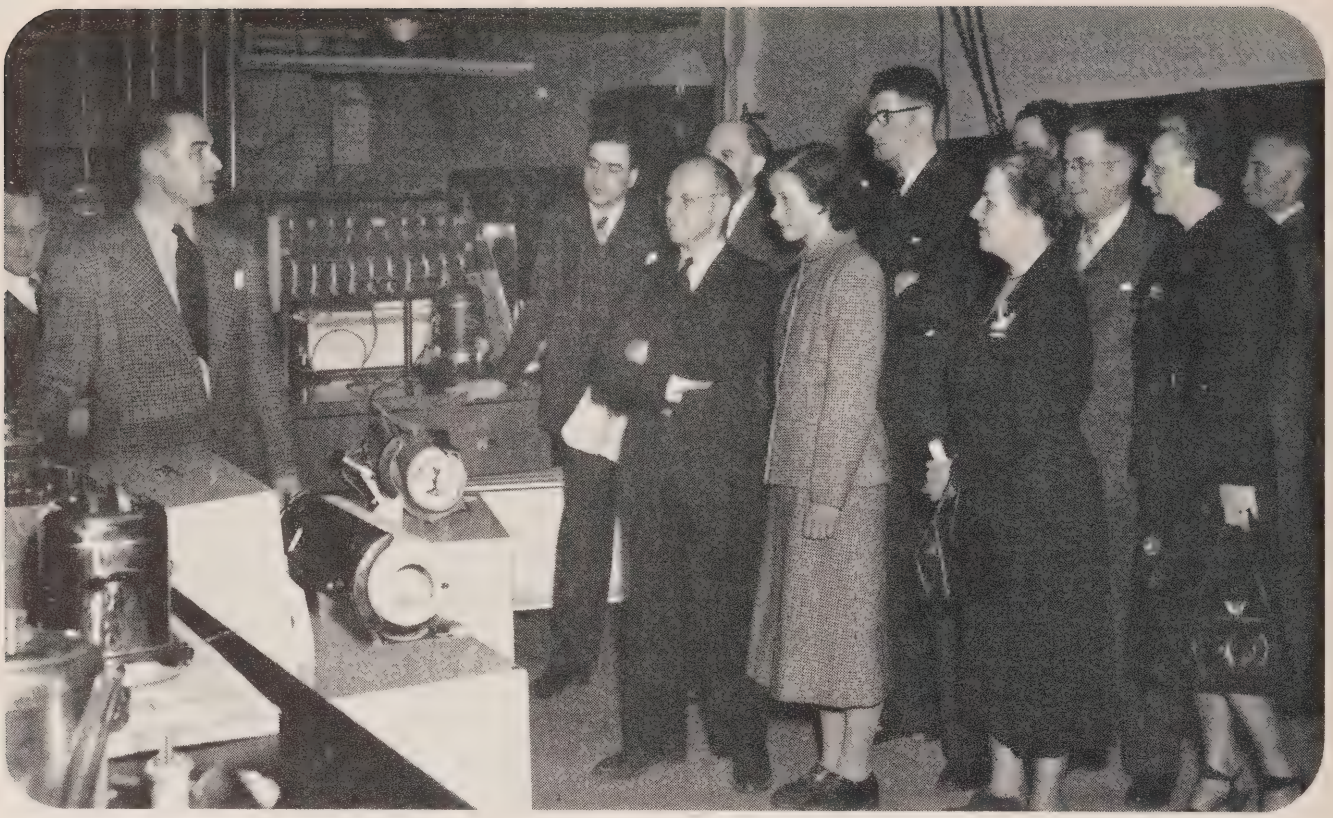
At the sixth annual quarter-century dinner held recently under the chairmanship of General Manager J. Clark Keith, the Windsor Commission paid its tribute to the 45 Hydro division, 13 water division and three administration employees whose combined service time totals 1,833 years. During the dinner, presentations of pins and watches were made to five new members of the 25-year group which represents about one-fifth of the staff of the Windsor Commission, including five women:

Presentations to three new quarter-century members of the Hydro division staff, including Roy Thomas, William Fregin and Clayton Evans were made by Commissioners Ernest Davenport, Warren P. Bolton and M. J. Brian.

Retirement of F. D. Hubbell, Superintendent of the Hydro Division of Windsor P.U.C. and a member of the 25-year club has been announced by General Manager J. Clark Keith, President of the A.M.E.U. Mr. Hubbell will be succeeded by Wesley Armour, head of the meter department.

Largely responsible for the development of Hydro service in Windsor during the past 35 years, Mr. Hubbell started his Hydro career in the Border City on February 16, 1914. He and Edgar Wallace were the first two employees. At that time, O. M. Perry, who had just taken over the job of general manager, occupied a small office equipped with a kitchen table, two chairs and a typewriter. Windsor was then being partly served with 60-cycle electric power through the Detroit United Railway.

Mr. Hubbell organized the crew of men who had worked with him on the Trent Valley Waterway system and set to work with Mr. Perry to build a Hydro system. On August 20, 1914, approximately seven months after he had arrived in Windsor, Mr. Hubbell was present when the first Hydro power was turned on. In paying tribute to Mr. Hubbell on the eve of his retirement, the Windsor Daily Star recently remarked: "Hydro has grown rapidly in Windsor. And, Mr. Hubbell has been one of the men who has been in there all the time, making sure that Hydro consumers got good service 24 hours per day and seven days a week."



KEEN INTEREST is reflected on the faces of these visitors as Basil Hubbard explains some of many activities of the Approvals Division at Hydro's Strachan Avenue Lab, vitally linked with the Commission's day-to-day service to Ontario's citizens.

IN SEARCH OF RESEARCH

● EDITOR'S NOTE: Edith Kent, *Hydro News* staff writer, has been exploring Hydro's "Lab" in search of the research which is vitally associated with the Commission's day-to-day operations and service to the people of Ontario. This is the first in a special series of articles on the laboratory.

IN Toronto there is a building in which the daily activities of some 400 quiet, unassuming men and women exercise a far-reaching influence upon the everyday life of a great many Canadians.

This is the H.E.P.C. Research Laboratory, a three-story structure on Strachan Avenue, near the C.N.E. grounds. Housing a multitude of various operations, the lab asks questions, answers questions, conducts tests, analyzes materials, sets standards, and in general seeks to ensure the safest, most efficient operation of all types of electrical appliances and equipment—which in this electricity-conscious era constitute a goodly portion of the equipment in any modern industrial, commercial, or domestic establishment.

No one can claim, for example, that he is unaffected by the construction of a new power development. It means more light to read or work by, more "juice" to turn the wheels of industry, more heat to cook dinner or warm water.

However, it is vital that a new development, once completed, maintain a high standard of efficiency! This point presents some interesting problems.

For instance, what determines the proper location of the project according to soil and rock formation?

What provides a type of concrete that will withstand the tons of pressure exerted by water at the bottom of the dam?

What detects the presence or absence of flaws or cracks in the concrete?



Answers to these questions are provided at Hydro's lab in co-operation with other departments of the Commission.

Carrying the process still further, radar experts in the Hydro lab adapted for Commission use a device widely used during the war. This device makes it possible to detect and locate, within reasonable distance, faults in transmission lines, thus lessening the time the line is "dead" and providing a more efficient service to the consumer. At the same time, it makes a considerable saving in time and money which would otherwise be expended in locating the break on foot.

Joint Temperature

Another piece of apparatus which helps maintain a continuous supply of power

to consumers throughout the province is a "gadget" which determines the temperature of joints in high voltage transmission line conductors. This instrument is so sensitive that it records such minute changes in temperature as the lighting of a cigaret on the other side of the room, or the approach of a perspiring forehead near the machine.

But to return to our individual Hydro consumer. Perhaps the consumer is a housewife. In that case, the departments of the lab that would most interest her would probably be the Photometric Section and the Approvals Division. In the former, tests are carried out on lighting equipment of all kinds, including Hydro lamps. A special room set aside for this purpose glows with the light of many thousand candlepower, as hundreds of lamps are kept burning day and night to see how they stand up under hours of usage.

Approvals Lab.

In the Approvals Lab, the housewife would have a veritable field day. Possibly the most appealing part of all is the room in which electrical appliances are tested to maintain safety standards set by the Canadian Standards Association, in order to minimize the dangers of fire and shock. Stoves, heaters, ironers, washing machines, toasters, waffle irons, switches, sockets, and a myriad other types of electrical equipment are sent in by the manufacturer to be tested before being put on the market. And not only are these appliances tested before becoming available to the public—even after production is in full swing, inspectors are sent out from the lab to make sure that the standards previously set are being adhered to. In this way, an invaluable service is rendered to domestic consumers in all parts of Canada by the Approvals Lab, which acts as agent for the Canadian Standards Association.

Only a small portion of the tests and research carried on at Strachan Avenue has been touched on above. There is also the high-voltage test for linemen's rubber gloves; the weatherometer which simulates all kinds of exposure conditions affecting painted surfaces; the device that doubles as a housewife in that it subjects appliance cords to a terrific amount of twisting and pulling; the compression-testing machine for concrete; the making of artificial lightning for transmission line tests; investigations into the preservative treatment of wood poles, and countless others.

It is the purpose of this article to introduce a series which, it is hoped, will give Hydro News readers a clear and comprehensive conception of the highly important work being done in the Strachan Avenue Laboratory and the significance of that work in relation to Hydro's 24 hours-a-day service to the people of Ontario.

From Battle Lines To Hydro Lines



BEFORE—This is the half-track as it came from American Army surplus stores. Rugged power is evident in every line of the massive vehicle, which in its military career was used for towing anti-tank guns and for transporting army personnel.

FROM front line to power line is the story of one of Hydro's newer types of line construction equipment, the half-track carrier.

A hybrid sort of vehicle, part truck (front) and part tractor (rear), the half-track started its career as an asset of the American Army in the European campaign of World War II. Used for carrying personnel, it proved its dependability; for towing anti-tank guns, its power and manoeuvrability.

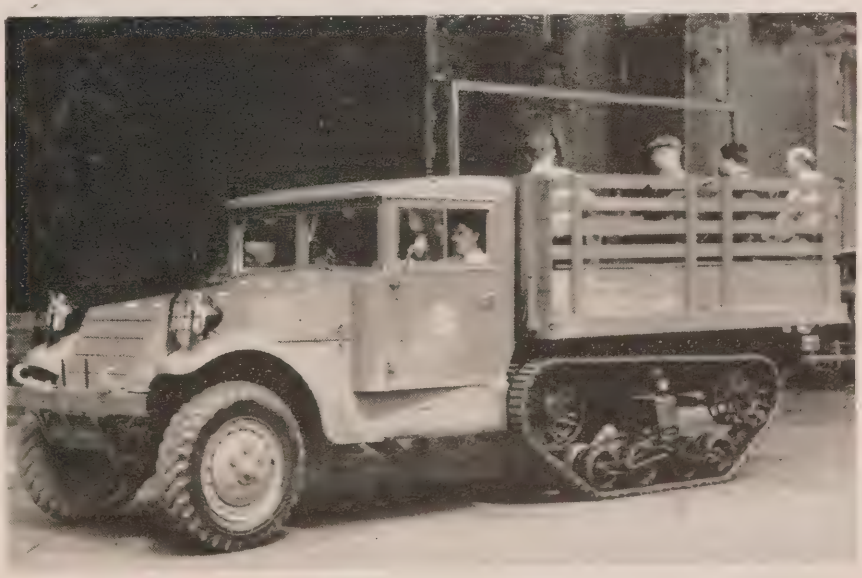
Eight of these carriers were purchased by the Commission from American surplus stores, and converted for Hydro purposes at the Bloor Street service building in Toronto.

Originally heavily armour-plated, each vehicle was stripped of over a ton of steel, and a conventional cab mounted on the front. Earth-boring machines, to drill holes for transmission line poles, were mounted on four of the carriers, while the remaining four are being used to transport personnel and items of line equipment as required.

As this type of carrier is no longer in production, a supply of spare parts adequate for five years was acquired at the same time as the main purchase.

Efficiency of the half-track, Hydro men declare, is demonstrated most markedly in cross-country usage, where its powerful engine, rear tracks, and simultaneous front and rear drive result in a better performance, under reasonable operating conditions, than even that of a crawler tractor.

AFTER—Conversion to civilian life has deprived the half-track of none of its assets. Painted Hydro red, it now carries personnel and line equipment items, while its counterpart bears an earth-boring machine used in digging poles.



Cecil Carrick Appointed Hydro General Counsel

APPOINTMENT of Cecil Carrick, K.C., as General Counsel to The Hydro-Electric Power Commission of Ontario has been announced by Chairman Robert H. Saunders.



Mr. Carrick, who joined the Commission's Legal Department in 1937, had been acting as Solicitor to the Commission up to the time of his present appointment.

A native of Brandon, Manitoba, and a graduate of Brandon College, now an affiliate of the University of Manitoba, he was a school teacher before he entered Osgoode Hall. Mr. Carrick was called to the bar in 1914 and practised law in Toronto before coming to Hydro.

COACH SAUNDERS GETS TOUGH



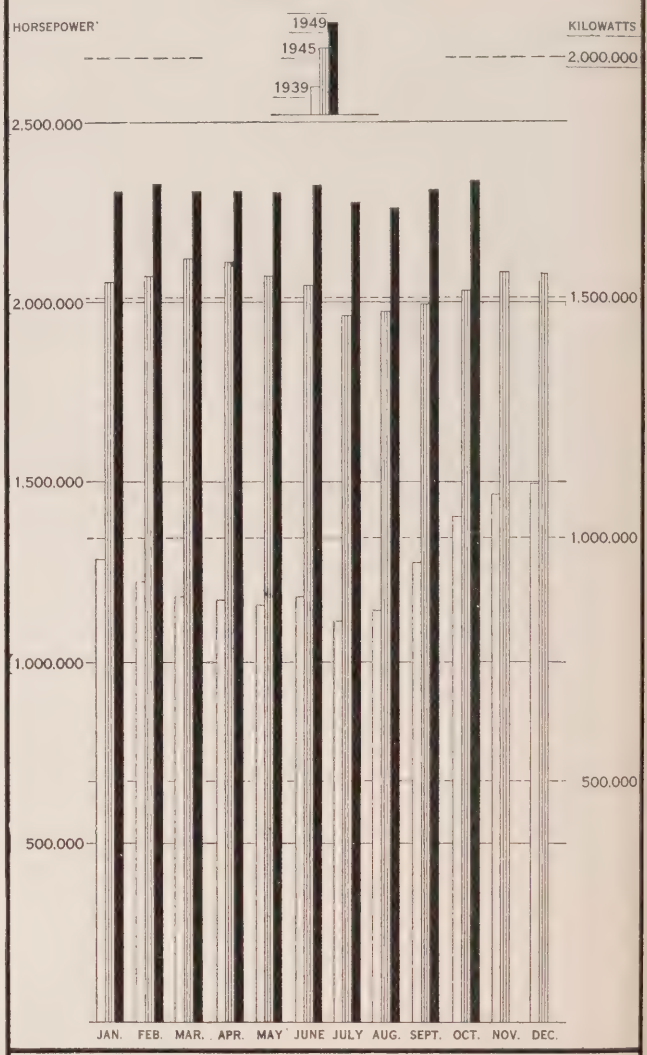
—Cartoon is by Jack Boothe, The Toronto Globe and Mail

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW. OCTOBER, 1949	MAXIMUM 20-MINUTE PEAK KW. OCTOBER, 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System...	1,903,573	1,700,640	+ 11.9
Thunder Bay System.....	165,780	126,110	+ 31.5
Northern Ontario Properties.	231,513	208,952	+ 10.8
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System...	1,743,973	1,542,975	+ 13.0
Thunder Bay System.....	171,380	132,210	+ 29.6
Northern Ontario Properties.	234,878	212,132	+ 10.7


Happy
New
Year


Season's
GREETINGS

HYDRO News



NEW NEIGHBOUR

VOL. 37 JANUARY, 1950 NUMBER 1



Don't touch that Fallen Wire!

Despite all of Hydro's careful precautions, there are times when storms or unavoidable accidents cause electric wires to break down. When that happens, *don't touch that fallen wire!* Your very life may be at stake.

Keep curious children—and adults—away at all costs. Shock, severe burns and worse can result from touching such a wire.

If you discover an electric wire on the ground or hanging dangerously low, remember these three things:

1. Don't, under any circumstances, touch the wire.
2. Stay on guard and keep *everyone* away until help arrives.
3. Have someone notify the police and the nearest Hydro office *at once.*

Nothing has been overlooked to give you the best possible electrical service. But, should trouble occur, your co-operation in being careful and warning others may prevent injury or even loss of life.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER SHOTS

FROM our office window we have watched our New Neighbour gradually assume the majestic proportions of a structure which will endow the magnificent role played by the Hospital for Sick Children down through years with the outward lustre and dignity befitting such a role. With this month's front cover illustration from the camera of J. B. Helling, Hydro staff photographer, Hydro News is proud to salute not only a new neighbour but a great institution of healing. E. A. Johnston, another member of Hydro's photographic staff contributed the photograph depicted on the back cover.

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JANUARY

NEW YEAR PREVIEW

To all of us who have been engaged in one way or another upon Hydro's vast development and construction program this New Year must seem like "a peak in Darien" from which we can at long last glimpse the first substantial fruits of our labours. During the year of grace 1950 Des Joachims with its 480,000 horsepower, Pine Portage with its initial delivery of 60,000 kilowatts (80,000 hp) and Tunnel with its 42,000 kilowatts (56,000 hp) will be brought into service.

We look back upon a period of unprecedented achievement in the construction field. During the past twelve months work at no less than five new hydro-electric developments, representing a total power production capacity of 784,000 kilowatts, or approximately 1,050,000 horsepower, was carried forward simultaneously, while a start was made on the two largest steam-electric projects ever undertaken in Canada—the Windsor and Toronto generating stations, which will have a combined capacity of 320,000 kilowatts or 428,000 horsepower.

During the fiscal year 1949 approximately 4,400 miles of rural lines were built, and allowing for transfers to the municipalities, more than 35,000 permanent consumers added to rural services. Up to the end of the last fiscal year (October 31, 1949) a total of 31,721 miles of rural line had been built, serving 255,278 consumers. And last year witnessed the inauguration of the frequency conversion program in Southern Ontario.

When Des Joachims and Tunnel are in service, it is believed that sufficient new power will be available to meet the anticipated increase in load demand in the Southern Ontario and Northeastern Ontario systems and also to offset any energy deficiencies such as occurred in 1948 and again this winter. The new power "freshet" from Pine Portage will augment Hydro services in the Thunder Bay system, contributing to the load for the Lakehead cities and to the power pools of the pulp and paper and mining industries.

Since the inauguration of its present $582,000,000 program, the Commission has built more than 350 route miles of 230,000-volt transmission line and more than 800 miles of 115,000-volt line. During 1950 this business of linking up its new power projects with consumer areas will be carried forward at a still more rapid pace towards the final program objective of 1,515 additional miles of 230,000-volt line and 600 additional miles of 115,000-volt line. Associated with this high tension line construction is the building of a number of transformer stations at strategic locations.

Hydro's $200,000,000 Frequency Conversion program shifted into high gear on October 5, 1949, when the first group of consumers in Scarborough Township had their electrical equipment changed over to 60 cycles. Conversion in Scarborough is being continued this year, while East York, North Yonge, Sarnia, Courtright, Imperial Oil of Sarnia, Strathroy, Sarnia Township, Exeter and Lucan districts are also included in the 1950 program. This frequency standardization being carried out over a long-term period in Southern Ontario is, under existing conditions, one of the most complicated enterprises of its kind ever undertaken in Canada, demanding painstaking planning, skilful engineering, exact timing and a goodly amount of what our American friends call "know how." That this program is proceeding with a minimum of inconvenience is a tribute to all concerned, including the consumers themselves.

The present economic situation suggests that power demands will continue to increase during 1950. While there has been a decline in the demand from heavy industry, the high level of home construction, the establishment of new industries, rural electrification and increased mining activity all point to continued load growth. No decline in wages is foreseen, nor any major change in material prices. It is hoped, however, that increased productivity and more active competition in manufacturing may result in lowering the costs of Hydro's tremendous construction program.

As announced by Chairman Saunders, economic conditions directly affecting Hydro's financial structure have made it necessary for the Commission to revert to the 1937 level of rates with respect to the supplying of power to the Southern Ontario municipalities.

This action was taken only after long consideration and after a complete canvass of the situation from every angle. Down through the years the cost of electric power to all classes of consumers has become lower and lower while the costs of other services and commodities have steadily increased.

Indeed, it has always been the policy of the Commission to provide power at the lowest possible cost consistent with financial stability. In making the present adjustment in the cost of power, the Commission is adhering to that policy.

EMERG

PLACED IN SERVICE AT HAMILT
AND STELCO HIGHLY COM

TWO more of Hydro's emergency steam stations, with a combined capacity of 21,000 kilowatts, were placed in service December 2.

Located adjacent to the Ontario Paper Company near Thorold, and at the plant of the Steel Company of Canada in Hamilton respectively, these are the Ontario Paper G.S. and Stelco G.S.

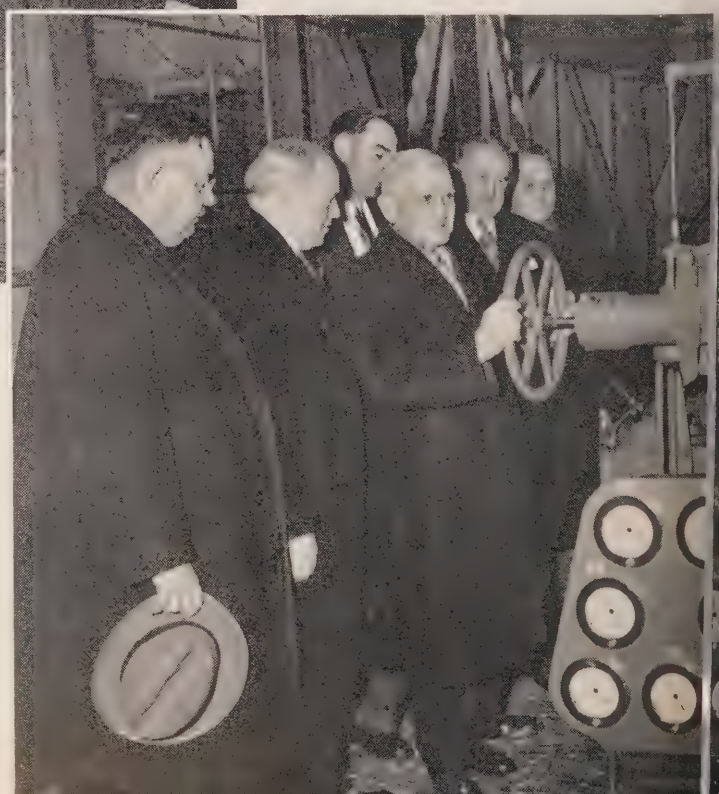
The former is situated between Highway No. 58 and the Welland Ship Canal, on property leased from the Department of Transport. It consists of three 5,000-kilowatt turbine-generators, operating at 66⅔ cycles, complete with condensers and auxiliary equipment, steam being supplied to the turbines from the adjacent Ontario Paper Company's plant. Installation of the units was carried out by the Commission but the paper company undertook to supply the piping connecting the company's steam equipment to the turbine-generators.

Power from this station is fed into the old DeCew system over a newly-erected temporary transmission line.

At the Stelco G.S. in Hamilton, a 6,000-kilowatt, 25-cycle steam turbine has been installed. It is supplied with steam from the boiler plant of the Steel Company of Canada. This unit, when operated in con-







A SWITCH-OVER from civic to operating duties is made by Dr. W. H. McMillan, Mayor of Thorold, in starting delivery of power from Ontario Paper G.S.'s first unit. Mayors L. Skipper, Merritton, and R. M. Richardson, St. Catharines, and R. H. Saunders watch.

POSSESSING A muscular physique, Chairman Bob Saunders would probably have liked to have been in overalls himself when he warmly greeted this group of workers at the Ontario Paper Company whose three emergency units generate a total of 15,000 kilowatts.

REEVE JOHN Barron, Thorold Township, is obviously a man who knows how to take hold of things. Here, he takes part in the official ceremony. The group includes A. Schmon of Ontario Paper Co., Dr. W. H. McMillan, R. M. Richardson and L. Skipper.

Y UNITS

OLD DECEMBER 2—ONTARIO PAPER AIRMAN ROBERT H. SAUNDERS

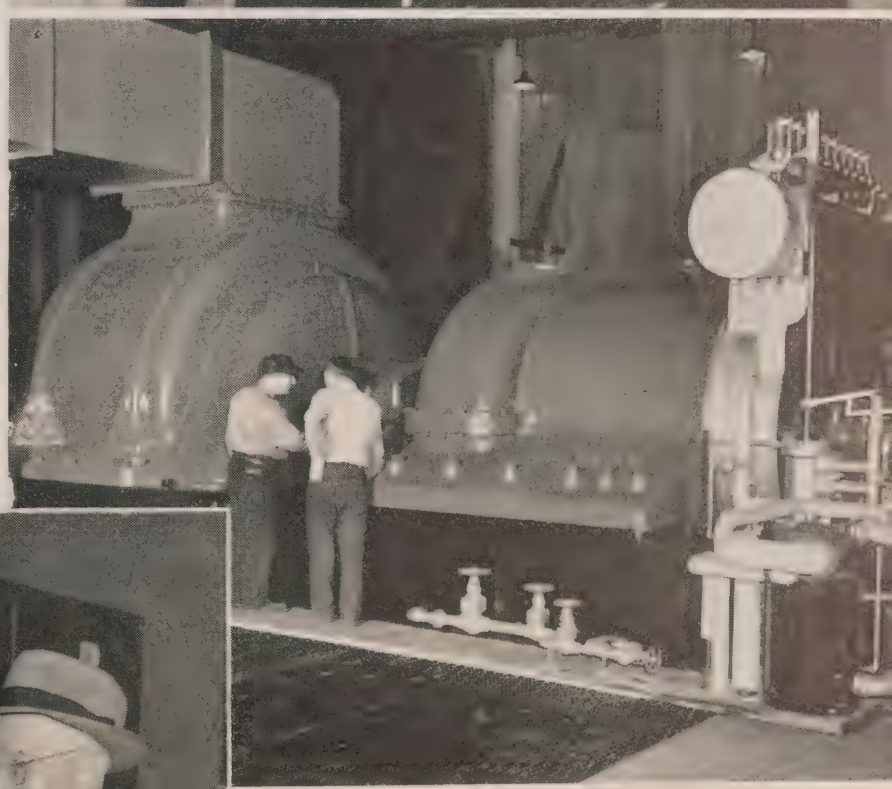
junction with a turbine owned by the company, makes it possible to produce electrical energy to the extent of about 10,000 kilowatts.

The installation was largely engineered and carried out by the Steel Company of Canada, and is regarded as a contribution of major importance to the general power supply at the present time. Purchased from the Dominion Steel Company of Sydney, Nova Scotia, the unit will continue to operate at 25 cycles, as it did in the Dosco plant.

At the request of the Commission, both the Ontario Paper Company and the Steel Company of Canada will operate and maintain the emergency units associated with their respective steam plants.

Commending the assistance given by these two industries in helping to meet the present power situation, Hydro Chairman Robert H. Saunders declared the two steam stations excellent examples of co-operation between public utility and private enterprise. He went on to say that although the units would provide some measure of relief in the present emergency, voluntary conservation of electricity by everyone was still vital to the maintenance of Ontario's present level of industrial production.







REMEMBERING THAT one good turn deserves another, Chairman Robert H. Sanuders swings into action to open Stelco's 6,000-kw steam unit. H. G. Hilton and R. A. Gillies, President and Vice-President respectively of the Steel Company of Canada look on.

THIS IS it! A close-up view of the emergency steam station located in the plant of the Steel Company of Canada in Hamilton. The company supplies the steam and uses the power produced by this unit and it thus helps relieve shortage of power.

TAKING A hand in the proceedings, H. L. Smye, Chairman, Hamilton Hydro-Electric Commission, reaches out and demonstrates switch turning to Harry Cornett, master mechanic of Stelco. Hamilton Hydro Manager A. W. Bradt watches with a critical eye.

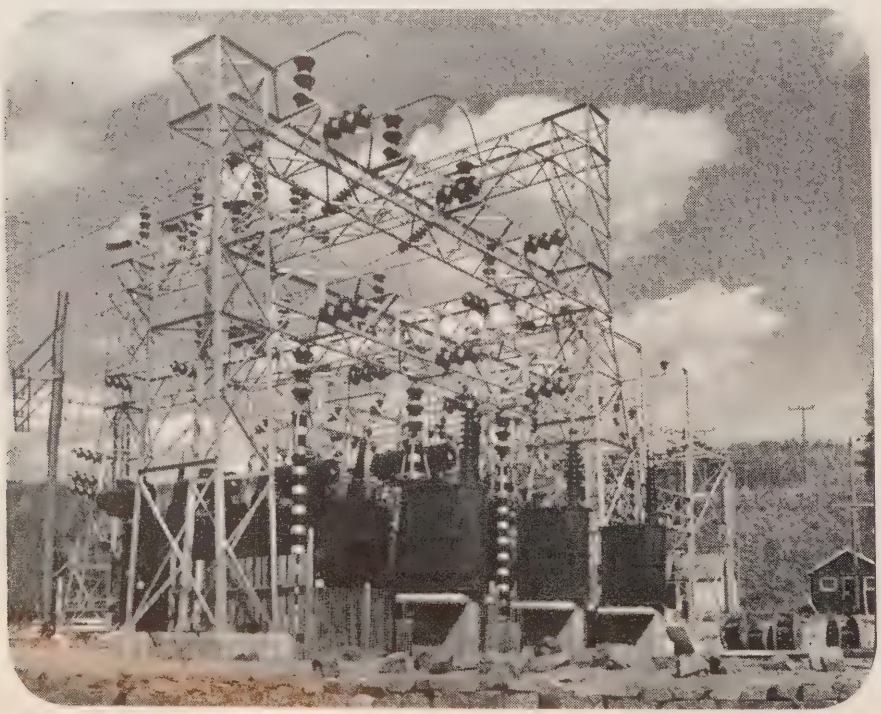
New Lin

HYDRO NEWS PAYS

by
Harry M. Blake
Hydro News



FOUNTAIN FALLS, picturesquely located on the Montreal River, will be tied in on a 44,000-volt transmission line with the group of stations serving the Timiskaming district.



SWITCHING AND transformers at Upper Notch, key station in Hydro's program of integration and rehabilitation for the plant acquired from the Northern Ontario Power Company.

DURING its more than 40 years of service in the interest of all classes of electrical consumers, The Hydro-Electric Power Commission of Ontario has had to meet many problems of integration and rehabilitation. These have arisen in the natural course of development and expansion. From time to time, with the approbation and in the interest of all parties concerned, privately owned generating stations and even privately owned power systems have been acquired by the Commission and have had to be incorporated into Hydro's own unique structure and organization.

The properties of the Northern Ontario Power Company in the Porcupine and Timiskaming districts of Northeastern Ontario are among the most important of Hydro acquisitions in recent years. These comprise eight hydro-electric generating stations and a compressed air plant, together with a complicated net work of transformer stations and transmission lines. Since 1945, as trustee for the Provincial Government, the Commission has assumed the responsibility for the operation of this somewhat heterogeneous system.

The plant taken over by the Commission had been built up piecemeal to meet the increasing requirements of the gold and silver mines during the periods of the great discoveries and extraordinary activities which preceded and followed the First World War. A power resource of approximately 50,000 kilowatts, or some 66,500 horsepower, was ultimately provided by the Northern Ontario Power Company, and in 1933 this was augmented by loads from Hydro's newly acquired generating station at Abitibi Canyon.

Save for the present abnormal energy deficiency it would appear from all reports that the power supply available to this section of Northeastern Ontario has been sufficient to meet consumer demand. Hydro's "Three Musketeers'" policy of one for all and all for one applies, however, just as much to the northern as it does to the southern regions of the province. If there is any power to spare from the output of the plants of the old Northern Ontario Power Company, it can be used to good purpose in other districts. Similarly, other Hydro generating districts must be prepared to help meet an increased demand for power in the gold and silver mining

or Old Chain

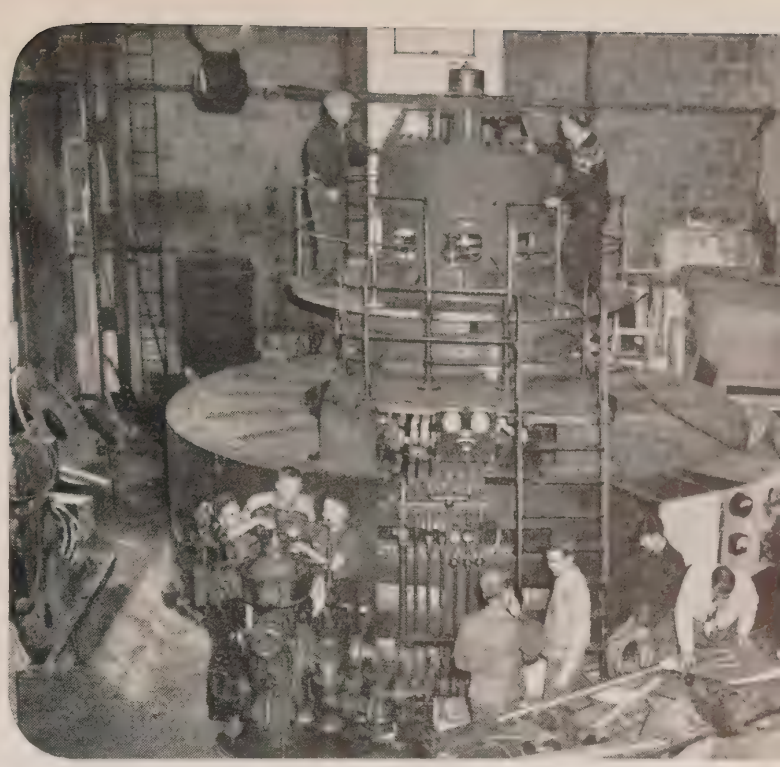
ORTHERN ONTARIO PROPERTIES

areas should it arise. These are the thoughts which are spurring on the integration and rehabilitation programs upon which the Commission has been steadily engaged since it assumed control of the Northern Ontario Power Company's properties.

Objects of Programs

The integration program aims both at improving local services and at effectively tying-in the Northern Ontario Power Company's system with the Northern Ontario Properties, which comprise all the power systems in the north under Hydro control, with the exception of Thunder Bay. Rehabilitation is concerned with the reconditioning of equipment, which has been through a long period of "wear and tear," and with the providing of the maximum amount of protection against power losses due to internal faults and the electrical storms so prevalent in Northern Ontario during the summer season.

To get a fair idea of what was going on and of its general significance to



GENERATOR TESTS, Upper Notch. Top, Keith Reid and Chief Operator W. Blair. Botto
A. Menzie, W. Thorne, K. Bredan, E. J. Bentley, D. Bradley, J. Bland and E. J.



FLOOD CONTROL sluiceways at Upper Notch. The two closer to the powerhouse have electric gates, the others, stop-logs.

electrical consumers in Northeastern Ontario, it was suggested to Hydro News that it would be a good plan first to visit the key station of the integration program at Upper Notch on the Montreal River. From there the itinerary would more or less suggest itself.

Upper Notch is about 16 miles by road south of Cobalt and about 10 miles upstream from Lake Timiskaming. The station was built by the Power Corporation of Canada in 1930. Precedent to the time of our arrival it had been out of service for a year or more while its conversion from 25 cycles to 60 cycles was being carried out. During the years it was generating power at 25 cycles this station occupied an anomalous position with respect to its more immediate neighbours which were all operating at 60 cycles. This meant that there could be no local tie-in. As a matter of fact, the output of Upper Notch, was transmitted to the Timmins district by a 155-miles-round-about circuit through Quinze in Quebec. Now Upper Notch (8,400 kilowatts—11,200 horsepower) will be tied in with Matabitchuan (9,000 kilowatts—12,000 horsepower), Fountain Falls (2,000 kilowatts—2,650 horsepower) and Hound Chute (3,600 kilowatts — 4,800 horsepower) on a 44,000-volt transmission line serving Cobalt, New Liskeard and Haileybury and also Thornloe, Earlton, Englehart, Dane and Kirkland Lake.

Integrating System

Now as to "exterior" integration.

In anticipation of the conversion of Upper Notch to 60 cycles, the Commission, in 1947, built a 115,000-volt transmission line through to Crystal Falls about 60 miles distant to the southwest. From Crystal Falls power generated at Upper Notch will be carried through to Sudbury where it could assist in meeting the increasing demands of the already somewhat undernourished 60-cycle areas. When Hydro's 42,000 kilowatt (56,500 hp.) Tunnel development comes into service next year it will be possible, when demand warrants, to switch power via Sudbury, Crystal Falls and Upper Notch into the Timiskaming and Kirkland Lake areas. Additional power to meet increasing demands will also be available at need via Crystal Falls from the LaCave development in 1952 and temporarily from Des Joachims in October, 1950.

Upper Notch Key Station

As we arrived at Upper Notch, the contractors, under the watchful eye of Hydro Superintendent W. Blair, were giving the final mechanical trial run to one of the two 60-cycle generators. This, if it proved satisfactory, was to be followed next day by the "heat run" and electrical tests. These would be voltage runs without any delivery of power into the system. They would be a check on insulation and would show whether or not the temperatures in field and stator at full output exceeded the guarantees.



REHABILITATION HAS been the order of the day at the Wawaitin generating station, situated on the Mattagami River about 16 miles upstream from Timmins. Working at repairs and adjustments to turbine parts are—left to right—Len Joyce, C. Bilodeau and G. Boucher. Wawaitin is one of three former Northern Ontario Power Company stations generating 25-cycle power.

Everything then being all right, the generating unit would go into consumer service. The electricity, generated at 12,000 volts would pass off the bus bars to the new 60-cycle transformer bank outside where it would be stepped up to 115,000 volts for transmission to Crystal Falls. Power for the Kirkland Lake area and the districts en route, it was explained, would be stepped down from 115,000 volts to the required transmission voltage of 44,000 volts through another bank of transformers feeding into a ring bus.

"United For Service"

Perhaps there is no better place on the Commission's System to visualize what integration means than this comparatively small but relatively important station on the Montreal River. As we stepped outside we inquired about the switching and the lines coming in.

"The nearest line," Mr. Blair explained, is the 44,000-volt line from Matabitchuan which will tie-in Upper Notch with Fountain Falls and Hound Chute, continuing on through Cobalt to Kirkland Lake. The centre line is what we call the Ville Marie feeder. Formerly Ville Marie, which is in Quebec, was supplied from the 60-cycle line out of Matabitchuan through a switching arrangement at South Lorrain. Now it will be served directly from Upper Notch."

In view of the fact that the old 25-cycle transmission line carrying power through from Upper Notch to Quinze, and thence on to Schumacher in the Porcupine district, was being abandoned with the conversion of Upper Notch to 60-cycle frequency, it was nice to know that the **entente cordiale** bewteen **Timiskaming** and **Temiskamingue** was being preserved through this new direct tie-in with Ville Marie.

Mr. Blair pointed to the steel tower line crossing the river and ascending the forest-clad bank on the other side. This was the 115,000-volt transmission line to Sudbury via Crystal Falls. It would soon be an important link in the interchange of 60-cycle power loads throughout all sections of Northern Ontario.

On the way back to Cobalt we called in at Fountain Falls and Hound Chute. Transmission from these stations at the present time is at the generator voltage of 11,000 volts. Transformers will soon, however, be installed to connect these stations with the new 44,000 circuit line tying-in with Upper Notch and Cobalt. It was pointed out that the transformer equipment would provide a considerable barrier to generator failure caused by lightning.

Matabitchuan

One of the features of the Matabitchuan station, located on a river of the same name, which is completely ignored by cartographers, is its comparative inaccessibility. From Cobalt to Silver Centre the road is about as good as one could wish for outside of paved highways. Then come seven miles of tortuous trail through a hopeless jungle of bush and rock. We took the advice of experience, left our car at Cobalt and hired a taxi. The driver was a youngster of about the age which, during the war, was considered as ideal for dive bombing.

"No, I don't go over this road in the wintertime," he grinned, as we hung in breathless balance on the apex of a cone-shaped boulder. "It's closed to traffic. Your Hydro people take their grub in the fall and den up." We went down the other side of the rock with a rush, throwing up a barrage of loose stones and frightening a covey of partridges.

The driver worked along with a clever corkscrew movement which seemed to anticipate avery obstacle. Even when the car stopped on an almost perpendicular rock face and started to slide back in spite of the brakes, he seemed to know just how to wiggle the stern so that it never quite dropped off the road into cavernous ditches alongside.

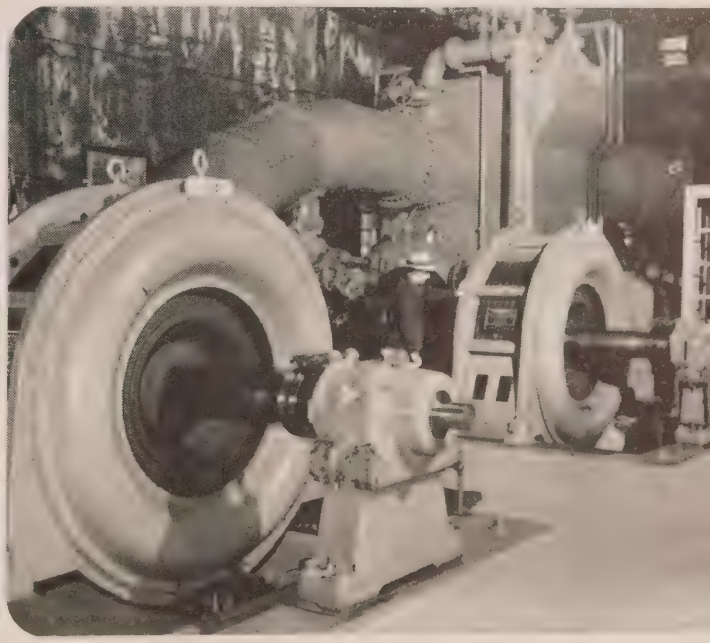
We came to the canyon called the Lower Notch which is a replica in miniature of Abitibi or the Tunnel Site on the Mississagi River. It was a place for picture making, but the light was unfavourable.

Matabitchuan is a station of similar capacity to Upper Notch—to be exact, 9,000 kilowatts or 12,000 horsepower. It is providentially supplied with good water storage which has been artificially improved. The watershed covers an area of 350 square miles, including many small lakes. The water, controlled by a solid concrete dam 675 feet in length at the head of the Matabitchuan River, is diverted to the powerhouse at the outlet of Bass Lake, through a canal 18 feet wide and 700 feet long. Two steel penstocks, 5 feet in diameter and 1,065 feet in length lead from the canal down the face of the cliffs to the horizontal turbines in the generating room. The descent provides a head of 315 feet.

Considerable rehabilitation was carried out at Matabitchuan in 1945 and 1946, and during the lay-off of Upper Notch for frequency conversion purposes this station, thanks to the excellent water storage, was operated at practically its



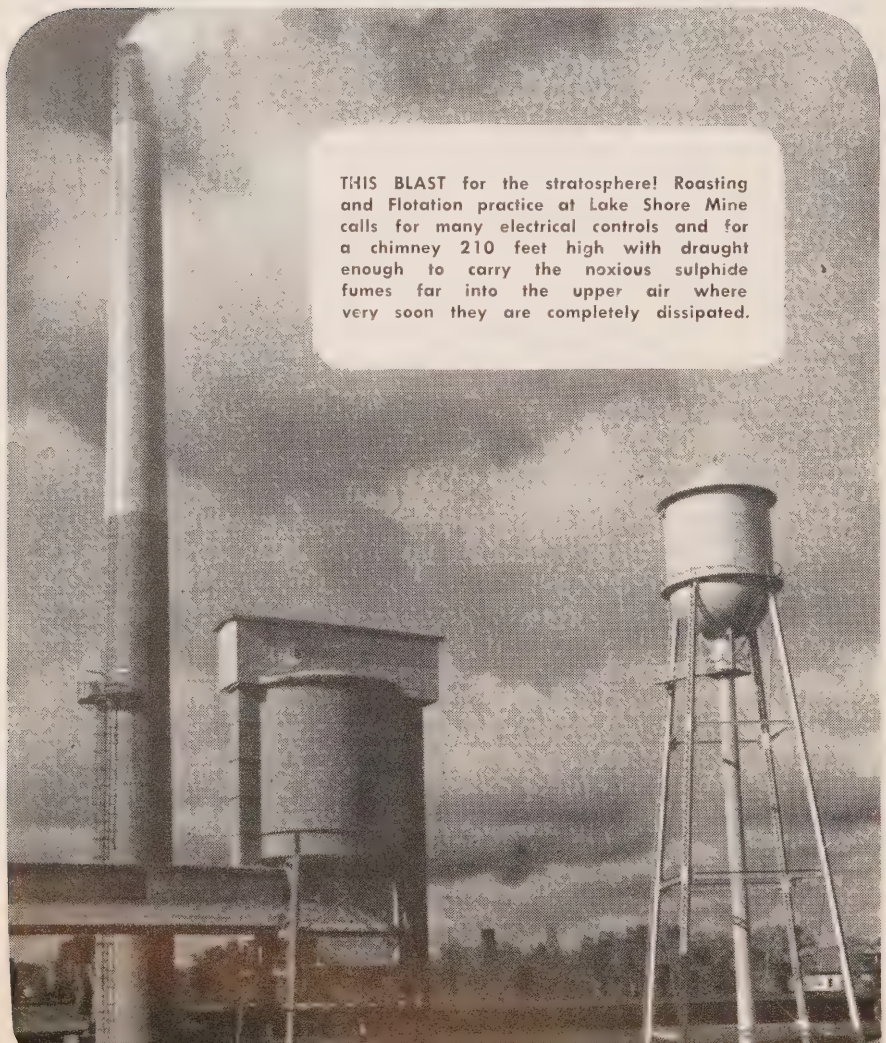
MATABITCHUAN STATION derives its name from the damming of the river of the same name. The powerhouse is built at the outlet of Bass Lake, providing a head of 315 feet.



STEEL PENSTOCKS, 5 feet in diameter and 1,065 feet long, are carried through the generating room at Matabitchuan to the four 3,300 hp turbines. Machinery has been overhauled and is operating at capacity.



VIRGINIATOWN IS typical of the many thriving mining communities in Northern Ontario. The gold used in the minting of the first Canadian gold coins is said to have been discovered in the neighbourhood. Hydro now supplies 60-cycle power to Virginiatown through Kirkland Lake. Loads to the adjacent Kerr-Addison mine, are however, furnished from the Abitibi Canyon station.



THIS BLAST for the stratosphere! Roasting and Flotation practice at Lake Shore Mine calls for many electrical controls and for a chimney 210 feet high with draught enough to carry the noxious sulphide fumes far into the upper air where very soon they are completely dissipated.

maximum capacity. It was interesting to learn from Chief Operator A. W. Rice that the peak load demand periods were January and February and August and September—the first period being considerably later and the second period considerably earlier than the corresponding peaks in Southern Ontario.

At Indian Chute, 35 miles southwest of Kirkland Lake on the Montreal River is located another 60-cycle generating station, supplying power to Kirkland Lake area. It is planned to install new transformers here in order to bring the transmission voltage up to 44,000 volts.

Rehabilitation is also being carried out in connection with the 25-cycle stations of the old Northern Ontario Power Company. These stations, supported by about 30,000 kilowatts or 40,000 horsepower of 25-cycle power from the Commission's Abitibi Canyon station furnish the electrical services for the Timmins and Porcupine districts. The three 25-cycle stations are all located on the Mattagami River. Two of them — Wawaitin and Sandy Falls are above the town of Timmins, while Lower Sturgeon is some miles downstream. Together, these stations have a capacity of about 18,300 kilowatts or approximately 24,500 horsepower.

"Star Performers"

Hydro consumers in Northeastern Ontario include a galaxy of "stars" whose performance it would be hard to match



HYDRO POWER coming in to the Kerr Addison mine at 26,000 volts is stepped down to 2,200 and 500 volts for use in mill and mine. Tungsten ore as well as gold was produced during the war as part of the Company's contribution to victory.

in any other quarter of the globe. Here, in the Sudbury Basin, are the famous nickel-copper mines which up to the end of 1948, had produced nickel to the value of more than $1,240,000,000, copper worth $627,000,000, and other rarer metals — platinum, palladium, iridium, rhodium, ruthenium, and selenium — valued at nearly $200,000,000. As for the gold mines in this district—and there are fifty of them served by Hydro—they are outrivalled in production only by South Africa's almost fabulous Rand. They have contributed the great bulk of the gold produced in Ontario which has now reached a value close to $1,900,000,000. Silver mining, which for many years experienced a decline, is said to be looking forward to a period of renewed activity. Looking back, we note that production up to the end of last year was valued at more than $288,000,000.

As was pointed out in a recent issue of Hydro News, the Kirkland Lake-Larder Lake mining camp vies with the Timmins-Porcupine camp in importance. Hydro's transformer and frequency changer station in the town of Kirkland Lake provides facilities for the receipt of both 25-cycle and 60-cycle power and its transmission of either frequency to neighbouring mines as required. The Larder Lake district is supplied with 25-cycle power routed via Hunta direct from the Commission's Abitibi Canyon station.

Under the uidance of H. W. Dunfield, the Commission's area manager, we visited the Kirkland Lake station, which is built on rising ground at the end of the storied "Golden Mile." On the 60-cycle side the power comes into a 2,300-volt bus and is stepped up to 44,000 volts through 10,000 kva transformer banks This 60-cycle power is fed into the town of Kirkland Lake and into several of the

LOOKING OUT over the "Golden Mile" at Kirkland Lake from the roof of Hydro's transformer and frequency changer station. Hydro power at both 25 and 60 cycles is supplied to 50 gold mines in the Porcupine and Timiskaming districts of Northern Ontario.



neighbouring mines. On the 25-cycle side, the power from Abitibi Canyon comes in at 115,000 volts and is stepped down to 12,000 volts through transformers with a combined capacity of 30,000 kva. Much of the 25-cycle load is transmitted to the 14,000 kva station at the Lake Shore mine. Another 10,000 kva, in terms of either 25-cycle or 60-cycle power, is represented by the four frequency changer units.

Mining At Lake Shore

Through the good offices of Mr. Dunfield, we were able to "follow" the main 25-cycle feeder line from the Kirkland Lake station into the premises of the famous Lake Shore gold mine.

The Lake Shore mine was staked in 1911, but production did not get under way until March 1918. Since that date, up to the end of last year, nearly 13,000,000 tons of ore have been milled with a total value of approximately $217,799,000.

"During that time," Superintendent J. C. Adamson remarked, "the company has paid $6,762,499 to your Hydro Commission and its predecessors for electric power."

"You have found Hydro power economical and useful, nevertheless, in getting all that gold out of the rocks," we surmised.

"Why, yes, of course," Mr. Adamson quickly agreed. "We are using a load now of about 6,500 kilowatts. The power comes to us from your Kirkland Lake transformers at 12,000 volts and we step it down to 2,200 and 550 volts for our own machines. Electric power is essential in the making of compressed air and for hoisting and milling operations as well as for many of the operations of the modern time-saving machines used underground. It also operates the rabbles in our roasting and flotation process."

Mill Operations

Actual mining practices at Lake Shore and the many other mines in the Kirkland Lake district are similar to those employed in the Porcupine area, (See Ontario's El Dorado, Hydro News, August, 1949) but there are some striking differences in mill operations. One of the features at Lake Shore is its roasting and flotation process for tailings.

Two stokers, each 160 feet long are employed in the calcination processes. Once the sulphides are lighted they continue to supply their own ignition until the roast is completed. After the sulphur is burned off, the gold is recovered from the pyrite grains by cyanidation. Since the introduction of the roasting-floatation process, in 1937-8, we are led to understand that a recovery of 97.7 percent of all gold in ore milled had been made as against a previous recovery of 96 percent. A chimney 210 feet high carries the sulphur fumes away from the stokers and into the "stratosphere" as far as the inhabitants of Kirkland Lake are concerned.

Electric loads of about 100 horsepower are employed in the roasting and loads of approximately 400 horsepower in flotation process controls, while loads of 100 horsepower are required for the electric assay furnace for determining the quantity of gold per ton of ore.

There are now 70 miles of underground workings at Lake Shore, the deepest at 7,575 feet. There are 769 employees. Working conditions are said to be unsurpassed anywhere. There is a well-organized employee welfare work and excellent medical and first aid facilities.

A Prolific Producer

The first gold coins minted in Canada are said to have been minted from gold produced in 1908 from the deposit which is now part of the Kerr-Addison properties at Virginiatown. Active milling operations by the present company began in May, 1938, at the rate of 500 tons a day. In December, 1939, production was stepped up to 1,200 tons and in July, 1941, to 2,100 tons a day. According to General Manager W. S. Row, this output was maintained until 1943 when the manpower situation due to wartime enlistment was reflected in production which fell back to 1,600 tons a day. In 1945 production had still further receded to 1,100 tons a day. Then came the turn in the tide. The Company undertook a postwar expansion program. One-half of the increased mill capacity was brought into operation in September, 1948, jumping the output to 3,100 tons daily. In December last year the remainder of the new milling machinery was brought into service and since then the company has been averaging a mill total of about 4,250 tons a day.

To the end of last August Kerr-Addison had mined 7,138,877 tons of ore and marketed gold to the value of $51,260,000. At the Ottawa mint price of $35 an ounce, average recovery is said to have been about $6.80 a ton. On account of the widths of its ore bodies, which make low costs possible, Kerr-Addison is said to have had an advantage over many mines

(Continued on page 27)



HYDRO HEAT loads of 1,600 amperes are required for the cupellation processes in electric furnaces at Lake Shore Mine. Assays determine the value of gold in the ore.



PREPARING BULLION for shipment to the Mint at Ottawa. Gold bricks are about the size of an average loaf of bread but they weigh about 100 pounds apiece. Each brick is valued at approximately $40,000.

far from full...

by

Edith B. Kent
Hydro News

ALTHOUGH rainfall in Southern Ontario has eased the power situation somewhat in this section of the province, water conditions are still a source of great concern in the Northeastern Region.

Twice during the last three months, faced with a drastic water shortage and an increasing demand for power, the Commission has been compelled to allocate power in that Region.

Lack of sufficient rainfall in the right places, together with the increase in demand, brought the situation to a point where, on November 13, the total volume of water in storage reservoirs in the Northeastern Region was approximately 36 percent below normal—that is, about 47 percent of capacity, as compared with 52 percent the previous year.

Attempting to ensure, if not an adequate supply of power throughout the winter, at least as fair a distribution as possible of what power was available, Hydro issued instructions to the areas affected that consumption was to be reduced by approximately 10 percent, effective November 21, 1949.

The photographs accompanying this article vividly depict the lowered level of Lake Wanapitei, in the Northeastern Region, in November. Of the eight major storage reservoirs in this Region, Lake Wanapitei was the least depleted. At that time, this lake was some five feet below spring flood level, and about two feet lower than normal for that period of the year.

Since November, water reserves have continued to fall and demands have not been curtailed to the extent anticipated. This resulted in the decision of the Commission to put into effect a further reduction of 10 percent of the previous quota, commencing January 16, 1950. At the time of the second reduction, the total volume of water in the reservoirs was about 47 percent below normal, or 36 percent of capacity as compared with 48 percent of capacity a year ago.

In order to assist municipalities to maintain their quotas, it was also decided to impose restrictions concerning the use of power on consumers in these areas. Such restrictions affect the use of outdoor lighting for advertising purposes, store window lighting and interior store lighting, and the use of space heaters.

The situation is regarded as extremely serious, and the Commission strongly urges the co-operation of all consumers in the matter of voluntary conservation.



WATER LEVEL at Lake Wanapitei was about five feet below normal when photo above was taken in November. Man's hand touches point reached by the water when lake was full in the spring; the normal summer level is approximately at his head.



POWER OUTPUT from Hydro's generating plants on Wanapitei River suffers when scenes like this occur. Tiny stream trickles through what used to be a small bay. Normal water level can be judged from the docks standing useless at right of photo.



MOORED BOAT is not in a canal lock, but tied to a dock on Lake Wanapitei. Ordinarily a fair step up is required to board the boat. This photo shows conditions which have led to 20 percent reduction in power supplies to this district.



by

C. G. W. Macintosh
Hydro News

**Centre of One of the Seven Wonders of the World—
Flourishing Municipality Among First To Join Hydro Family**

APPROPRIATELY termed the "Queen of Wonders," Niagara Falls has become the popular mecca for honeymooners as well as for tourists from all parts of the globe. "Honeymoon Capital of Canada" is but one of the many names for Niagara Falls. Over the years Niagara has also become synonymous with Hydro.

It has been called variously the "Power City of the World," "Gateway to Canada," "Tourist Capital of Canada" and, of course, the "Cataract City." It is a centre that plays many parts and each name for it would seem to apply equally well, depending on what viewpoint is taken.

But it is the beauty of the place that has aroused the interest and curiosity of visitors from all parts of Canada, the United States and from other countries. It is considered a "must" to see on the list of every visitor for, indeed, Niagara Falls is one of the seven natural wonders of the world.

The cataracts have attracted poets and artists from every part of the globe as well as countless camera fans. It is said to be the most-photographed spectacle in the world.

But it is the former, the poets and artists, who have sought untiringly to capture the majesty of the Falls and thereby describe or portray this beauty in print and on canvas.

Indeed, poets have had difficulty in expressing their reactions to the Falls in words. The Falls affect nearly every visitor differently. To some, the cataracts are terrifying and they seem to boom out like a roar of thunder. To others, the spectacle is soothing and the sound of the Falls is like pleasant music.

And there is music in the sounds emanating from the cataracts. Students of music have made exhaustive ear tests and have come up with some interesting observations. One of these, Eugene Thayer, revealed that "his ears were met, not by a 'roar,' but by a perfectly constructed musical tone, clear, definite and unapproachable in its majestic proportions." Thayer maintained that the trained ear at Niagara should hear a "complete series of tones, all uniting in one grand and noble unison, as in the organ, and all as easily recognizable as the notes of any great chord in music." He declared that there was "no roar at all, but the same grand diapason—the noblest and completest one on earth."

Likewise, the rapids have come in for their share of praise. One early writer in his report on the Falls declared "that above and below the Falls, the rapids are one of the most striking features of the spectacle. At least one can say something about them, compare them to something. When one comes to the cataracts, one can say nothing — they are incomparable."

Nearly every early writer since Father Louis Hennepin, French missionary and explorer, who was reported to be the first white man to see the Falls, has attempted to describe them.

In 1687, Fr. Hennepin described the cataracts as a place where "a vast and

prodigious cadence of water falls down after a surprising and astonishing manner in so much that the universe does not afford its parallel."

Previous to Fr. Hennepin's visit the native Indian with his "untutored mind" was the only one to contemplate the Falls. In exploring the St. Lawrence River in 1603, Champlain heard of the Falls from the Indians, and referred to them in his published report in a very indefinite way, but he never saw them. He can be credited with the first announcement to the world of the existence of Niagara Falls.

After Fr. Hennepin saw them in 1678, their fame spread and as civilization advanced, they came to be more and more the wonder and admiration of the world, until now it is estimated that more than five million persons come to view Nature's great handicraft each year.

But Niagara Falls has not always been open and free for visitors to gaze upon as it is today. When it was seen that the cataracts proved a great drawing power for visitors from all parts of the globe, various squatting interests obtained possession of every favourable point of observation around the Falls for purposes of private profit. They charged heavy admission prices to see the cataracts. At the same time, the shores of the river swarmed with sharpers, hucksters, peddlers and hackmen, who perpetually harassed all visitors. This had the effect of driving visitors away from the Falls.

Steps were taken to remedy this situation on both sides of the border. Lord Dufferin, then Governor-General of Canada, proposed in 1878 to the legislatures of New York State and the province of Ontario that a "small international park . . . carefully preserved in the picturesque condition in which it was originally laid out by the hand of Nature" should be considered. As a result of Lord Dufferin's suggestions the now famous Ontario Niagara Parks had their beginnings on the Canadian side of the cataracts, and the State Reservation of Niagara was established on the American side. These parks have been beautifully landscaped and are among the finest to be found anywhere in the world.

Was A Theatre Of War

However, the Niagara Frontier has not always been the friendly border that is is today. One hundred and thirty-five years ago it was the theatre in a great war with bloody battles being fought at Fort Erie, Chippawa, Queenston and Lundy's Lane between contending armies speaking the same tongue. Strangely enough it was at Lundy's Lane in Niagara Falls that one of the shortest but fiercest battles of the war took place on July 25, 1814, and victory was claimed by both sides. On that famous battleground a stone monument now stands, erected by the Parliament of



TORONTO POWER plant, above, was built by private company above Niagara Falls. First power delivered in 1906. Commission took over full control of station late in 1922.



STILL PRIVATELY owned, Canadian Niagara Power plant at Niagara Falls nevertheless supplies considerable power to the Commission, having recently augmented this supply.



WATER FOR operation of Hydro's Ontario Power plant which began operation in 1905, is drawn from Niagara River at a point a mile above the crest of the Horseshoe Falls.



SUPERINTENDENT J. Scott shows newlyweds, Mr. and Mrs. R. J. Baer, of Toronto, inscription on famous Rainbow Bridge at the Falls.



MAYOR HOUCK presents one of the honeymoon certificates given to all bridal couples who visit the Chamber of Commerce office.

Canada, proclaiming the victory of Canadian and British forces. Nearby is a stone bust monument of Laura Secord, famous heroine of the war of 1812-14.

But today most amicable relations exist between the peoples of the two neighbouring countries and evidence of this is seen in the millions of U.S. visitors who annually pour into Canada over the three international bridges at this important gateway. Likewise, there is a heavy exodus of Canadians at this border point to the United States.

Tourist travel is at its peak during the spring, summer and early fall months. But the winter season also attracts many thousands of visitors. Niagara then assumes a beautiful white raiment and the whole area presents a veritable fairyland of beauty. Another spectacle that is viewed with interest is the annual formation of a giant ice bridge on the surface of the lower river, immediately below the cataracts. This "bridge" stretches completely across the Niagara River from Canadian to American shores.

But the beauty of the Falls is not all that attracts visitors. For some reason, the Niagara River and the cataracts have lured a legion of daredevils who have performed many daring stunts, ranging from tight-rope walking acts across the gorge and cataracts, to swimming feats and barrel trips over the Falls and through the rapids.

Famous Stunters

Most famous of these stunters was the great Blondin, born Charles Emile Gravelet, a Frenchman, who left behind him the reputation of being the most sensational tight-rope walker of the 19th Century. He once carried a man across the gorge on his back and on September 8, 1860, Blondin performed before the Prince of Wales, the late King Edward VII. His acts encouraged a great number of other rope walkers who sought to emulate these risky feats. Other stunters included a Captain Matthew Webb, noted English swimmer, who lost his life on July 2, 1883, trying to swim the rapids; Miss Maud Willard who perished in a barrel in the whirlpool; Mrs. Anna Taylor who



HORSESHOE FALLS is one of chief points of interest for visitors in the famed Cataract City.



COUPLE VIEW monument to Laura Secord in Lundy's Lane Cemetery.



FOREMAN
Cowan

safely passed over the Falls in a barrel on October 24, 1901; Bobby Leach and Jean Lussier who also navigated the Falls safely; the late William "Red" Hill and his son William "Red" Hill, Jr., who shot the rapids in barrels, and a host of others.

Colourful as these feats may have been, Niagara Falls is noted for more important achievements in the field of science and engineering. In the 1880's when visiting Niagara Falls, Lord Kelvin saw the mad rush of waters as a monster piece of machinery, accomplishing nothing but pounding out its own life on rocks which formed its own bed. In his mind's eye, there appeared vast factories, deriving their power from the Falls, furnishing hundreds of men with employment and distributing millions of dollars worth of products, having been created by cheap power furnished by Nature. Less than a decade later his dreams began to become a reality when leading engineers and scientists started harnessing the Niagara River waters for the development of electrical energy. Today more than a million and a half electrical horsepower is generated on both sides of the border at Niagara.

Advert of Power

The advent of the electric power age gave impetus to the development of the communities surrounding the cataracts, on both sides of the border. The twin cities of Niagara Falls became known as the "Power City of the World," and industry naturally was attracted to the source of cheap power. Niagara Falls, Ontario, also was intimately linked with the early days of Hydro and the whole place became known as the "cradle of Hydro power."

The power plants at Niagara are familiar landmarks for all visitors. There are three plants in the immediate vicinity of the Falls, two of them owned by Hydro and the third privately owned. A fourth plant, owned and built by Hydro, the Queenston Generating Station, is located seven miles further down the river but usually is associated with Niagara Falls since it is visited by thousands of tourists seeing the sights in the Falls area each year. This plant was for many years the largest power generating station in the



MANAGER J. A. Williamson explains route of new line to members of Niagara Falls Hydro-Electric Commission during regular meeting.



PUBLIC SERVICE totalling 225 years is represented by this group of eight employees of the Niagara Falls Hydro-Electric Commission.



dit J. M.
ar Review.



VISITORS SEE bridgetower chimes with Commissioner C.D. Hanniwell.



EVENING REVIEW Publisher F. H. Leslie and Advertising Manager D. N. Fielding in conference.



AERIAL VIEW of Canadian Cellucotton Company at Niagara Falls. Building houses one of the most modern manufacturing plants in the area.



HYDRO EXHIBIT at the recent Industrial Exhibition in the Catara Held in Niagara Falls arena, the fair attracts large crowds ever

world. Located at the base of the gorge near the village of Queenston, the plant draws its water from the Upper Niagara River and the Welland River by means of an open-cut canal 12¾ miles long. The plant was placed in service in 1922 and has a normal operating capacity of 525,000 horsepower.

The first power stations to be constructed on the Canadian side of the border followed ten years after the initial developments started on the American side and were built by private companies. Work on the "Ontario Power" development was begun in 1902, with the first three units going into operation in 1905. By 1918, fifteen units were in service and the total rated capacity of the plant exceeded 180,000 horsepower. In 1917, the municipalities of Ontario, through their Hydro-Electric Power Commission of Ontario, which had been created in 1905, purchased the capital stock of the Ontario Power Company and its subsidiary, the Ontario Transmission Company. The generating station is located at the base of the cliff, a stone's throw from the Horseshoe Falls, and the broad expanse of the roof of the station is clearly visible from the top of the gorge. Water for the plant is drawn from the Upper Niagara River about a mile above the crest of the Horseshoe Falls and is conveyed 6,500 feet through conduits to the plant.

Like the "O.P." development, the Toronto Power plant with a rated capacity of 160,500 horsepower was constructed by a private company and delivered its first power in November, 1906. The powerhouse, located on the banks of the Upper Niagara River, a few hundred yards from the crest of the Horseshoe Falls, is built of Indiana limestone and is striking and impressive in design. The Commission purchased the Toronto Power Company and allied interests on November 1, 1922.

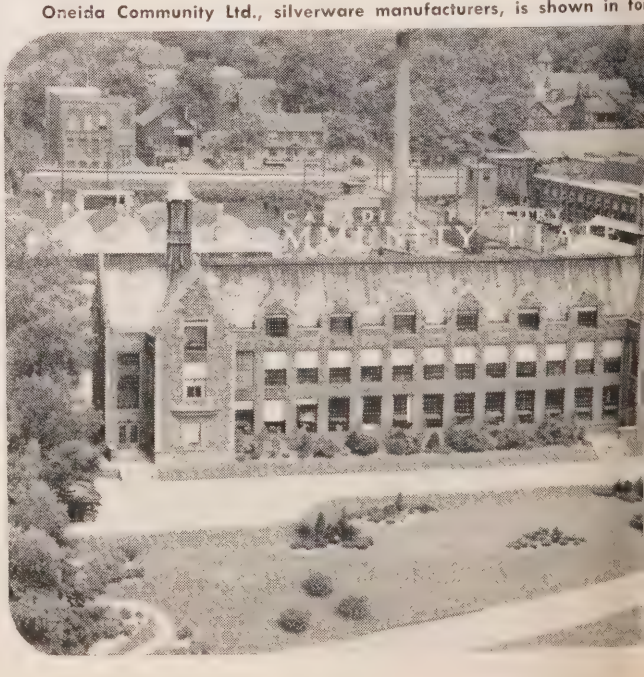
Before the electric power era, Niagara Falls on the Canadian side comprised three

(Continued on page 20)

NIAGARA WEAVING plant is believed to be the only one of its kind in Ontario. In background are Niagara River and Commission's Regional Office.



DESIGNED TO harmonize with its surroundings, Niagara Falls Oneida Community Ltd., silverware manufacturers, is shown in fo



LIGHTING EXPERIMENT

by

C. G. W. MacIntosh
Hydro News

A UNIQUE experiment in residential power distribution was tried out in a new subdivision in Niagara Falls that may have far-reaching effects in modernizing the streets of that city in the future.

In 1947, the City Council decided to divide a 20-acre tract of land, near the famous Lundy's Lane battlefield, into building lots. Council requested the Niagara Falls Hydro-Electric Commission to determine if the lines for power and lighting could be placed underground in the new residential area. This started considerable research and study by the Commission that resulted in the experiment proceeding.

By the use of new types of plastic insulated wires it was found that the lines could be placed underground with reasonable assurance of continuity of service. The power was supplied to transformers in this area through fibre ducts at 2,300 volts. The transformers were placed in concrete vaults which were partly underground. The top of the transformers in these vaults is about two feet above ground level for protection in case of a heavy flood in the area.

The vaults are large enough to hold a 75 kilowatt transformer and a small terminal block for the incoming and outgoing cables. The transformers are made accessible by removing the top of the vault and through doors on three sides. The vaults are not large enough to allow a person to enter. One of these vaults serves about one city block.

The service wires or cable (110-220V) feeding the different houses, as well as the 2,300-volt primaries and street lighting wires, are laid under the sidewalks for protection. These are located close to the edge of the sidewalk so as to be accessible in case of trouble. One hundred residences are served in this manner and eight or ten more will be added when built.

Cost of the work is only about 25 percent higher than overhead work if it is carried out at the same time that the sidewalks are laid. Commission members point out that it will take years to know the real value of this type of construction. It is the intention to give this area a thorough tryout before proceeding with further underground work in residential areas.

The Commission also is engaged in an extensive program of rebuilding residen-

(Continued on next page)



RESIDENTIAL STREET lighting experiment is tried out in Niagara Falls subdivision. Lines for power and lighting are underground. Inset is transformer, in vault partly underground, being examined by Commissioner S. E. Thomson and Manager J. A. Williamson.

SENIOR MEMBER OF NIAGARA COMMISSION

★

SENIOR member of the Niagara Falls Hydro-Electric Commission in point of service, Thomas Barnes has served on the Commission for ten years. He has just received an acclamation for another two-year term.

Mr. Barnes was Chairman of the Commission during 1949 and has served in that capacity on three other occasions.

His first association with Hydro was in the capacity of an operator with the former Toronto Power Company from 1910 to 1916. He is an electrical contractor, having operated his own business for several years.

Chairman Barnes was born at Leatherhead, Surrey, England. He received his education at the County Council school and Continuation school there. He also took a correspondence course in hydro-electric engineering. His special interests are gardening and football.

Mr. Barnes is married and has three sons and two daughters.



THOMAS BARNES

HONEYMOON CAPITAL

(Continued from page 18)

little settlements, Drummondville, named after the British commander at the Battle of Lundy's Lane, the village of Elgin later named the town of Clifton and Niagara Falls Centre. In 1904 these communities amalgamated to form the city of Niagara Falls.

As early as 1832 a movement was started to survey the land west of the Falls and establish a city there known as the "City of the Falls." The promoters, for whom some of the streets in the community later were named, Murray, Allan, Robinson, Dixon, Buchanan and others, had in mind primarily a financial venture and secondly an effort to preserve the Falls from vandalism and commercial enterprises that would detract from the natural beauty of the surroundings. Few sales were made and only a few buildings erected. The scheme was destined to failure and only the streets and names of the "City of the Falls" remain today.

For many decades Falls View was commonly known as the "City of the Falls." At this place were located the only hotels, the Pavilion House and the Ontario House. The famous Clifton House was not in existence at that time and there were no steam railways or bridges at the Falls.

Today, Niagara Falls is one of the most attractive cities in the province. It is a city of fine residences, modern stores and buildings, and, industrially, is forging ahead.

Leading industries in the city include the North American Cyanamid, Dominion Chain Company, Burgess Battery Company, Canadian Cellucotton Company, International Silver Company, Oneida Community Ltd., Niagara Wire Weaving Company, American Can Company and many others.

Niagara Falls joined the Hydro family of municipalities on December 15, 1915, being among the first to do so. The members of the original Niagara Falls Hydro Commission were Mayor C. N. Clendenning Chairman; Sydney Burrows and Robin Boyle.

The total power load has grown steadily since the Niagara Falls Commission took over the operation of the system. In 1915 the total load was 1,763 kilowatts (2,350 hp) while today the load is 10,000 kilowatts (13,330 hp). The Niagara Falls Hydro System has four substations and there are 6,666 consumers, made up of 5,640 domestic, 895 commercial and 131 industrial users.

Street Lighting Being Modernized

At present the Falls Commission is engaged in a unique lighting program. The residential street lighting is being completely modernized before proceeding with the rebuilding of the lighting of the business streets. Niagara Falls is believed to be one of the first Ontario municipalities to tackle the lighting program in this way. It is being done in this manner because the business street lighting system was considered semi-modern and it was felt that every effort should be made to light the side streets properly.

But the city of Niagara Falls owes its fame and great popularity mainly to the famous cataracts right at its front door. It is a picturesque community with attractive parks and unsurpassed scenery — a charming place in which to live as all its citizens will agree.

Those who dwell there maintain that there is a pleasant indefinable atmosphere. This verse, the author of which is unknown, seems to sum up the magical atmosphere of the whole place:

"Enthroned in might, Jehovah spake,
And bade creation's morn awake;
Sprang forth the light with quickening ray,
And brooding darkness fled away.
And thus Niagara's race began,
Without the voice or aid of man!
Its flowing waters crowned with spray,
Have never faltered in their way."

SECOND ACCLAMATION AS CHIEF MAGISTRATE

★

POPULARLY known as "Bill" to his host of friends and acquaintances in the Greater Niagara area, Mayor William L. Houck, M.L.A., has been Mayor of Niagara Falls for three successive terms and has just received an acclamation for a fourth term. This is the second acclamation that he has received since first being elected Chief Magistrate in 1947.

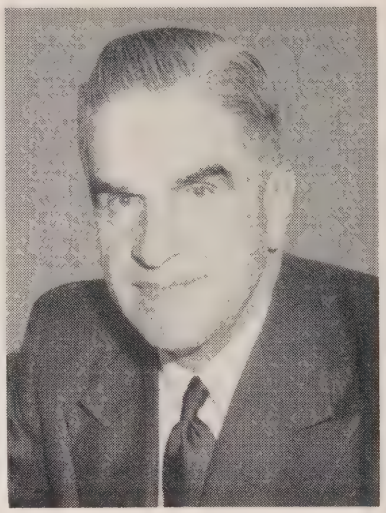
Mayor Houck holds the unique distinction of being head of the municipality and, at the same time, of representing the Niagara Falls riding in the Ontario Legislature. His career has been intimately linked with Hydro because, during the first period that he served in the Legislature from 1934 to 1943, he was appointed a cabinet minister without portfolio and was First Vice-Chairman of Hydro. He was re-elected as a member of the Legislature in 1948. Since 1947, when elected Mayor, he has been a member of the Niagara Falls Hydro-Electric Commission.

Born in Buffalo, N.Y., Mayor Houck attended Lafayette High School in that city and Cornell University, graduating with the degree of Bachelor of Science in 1915. He moved to Canada when a young man.

He is a member of the Lions Club at Niagara Falls and is a past president, a member of the Greater Niagara Chamber of Commerce, Cherry Hill Golf Club, Kappa Delta Rho Fraternity, United Church and the Erie Downs Golf Club, having been president of the club.

His special interests are golf, fishing and hunting.

Mayor Houck is married and has one daughter, and two grand-daughters.



MAYOR "BILL" HOUCK

LIGHTING EXPERIMENT

(Continued from page 19)

tial street lighting to modern standards. It is believed that Niagara Falls is one of the first municipalities to adopt this pattern — rebuilding street lighting in residential areas before proceeding with main business streets.

Manager of the Commission is John A. Williamson, B.A.Sc., P.Eng., who has been a member of the staff as Assistant Manager and Manager for the past four years. Consultant is John Edward Teckoe, former manager, who served on the Niagara Falls Commission for 33 years, before retiring from active service in December 1945, to be retained as consultant.

INCREASED DEMAND

IN a comparative report submitted to Windsor Public Utilities Commission recently, General Manager J. Clark Keith provided some interesting facts about the increase in the use of power among all classes of local consumers. In 1937, average domestic consumption per month was 157 kilowatthours. In 1949 consumption reached 234 kilowatthours. In respect to commercial consumption, 1937 average per month was 532 kilowatthours. Average commercial power use jumped to 826 kilowatthours last year. Average industrial use in 1937 was 8,017 kilowatthours per month. In 1949 it was 13,440 kilowatthours.

POWER



WILL FEED WATER TO A DRY CONTINENT

FOR the first time since British people came to Australia a century and a half ago, a great attempt is now being made to tame the mountains and dry interior "out-back" lands.

Hitherto, more than seven million people have crowded into the narrow coastal fringes; well-watered and fertile but of limited area. They have now outgrown this, and must more fully exploit the resources of mountains and plains if they are to maintain food and other exports to Britain and the world.

Imported Scots

The first great scheme to achieve this broad aim is the Snowy River irrigation and hydro-electric plan — an immense conception by any standards. And, it is worthy of note, Scottish engineers are being "imported" to help carry the scheme through.

The Snowy River scheme will provide part of the answer to Australia's greatest problem — lack of water. The inland two-thirds of the continent (about two million square miles) does not receive enough natural rainfall to support commercial agriculture. Furthermore, there are no large rivers to be dammed for irrigation.

The greatest engineering brains of Britain and Australia have considered this problem for generations, and have proposed some remarkable remedies. These are nearly all concerned with juggling the short and rapid rivers that arise in the eastern coastal mountains and rush down to the sea.

House Problem

During their long examination of various possibilities, engineers have paid particular attention to the network of rivers in the Australian Alps, in the southeast corner of Australia. These are the Snowy, Tumut, Tooma, Murrumbidgee and Murray Rivers—all flowing through country as wild as the Scottish Highlands.

This is the site of the Snowy River scheme, now being undertaken by the Federal Government in collaboration with the State Governments of Victoria and New South Wales; it will strain the resources of even the three governments.

The cost will be at least £200 million, which, on a comparative population basis, would equal a £1,300 million scheme in the United Kingdom. The Snowy scheme will cost half as much as all the public works undertaken in New South Wales for a century.

Seven huge dams will be built to control waters received in a catchment area of 2,000 square miles beginning this month.

All this work would be difficult even in the closely-settled British Isles. But in the Australian Alps area, it is prodigious. Communications are poor; there are no local industries, few townships and fewer amenities. Prefabricated homes have to be taken to the site to house workmen. Hospitals and schools have to be provided; so does food, clothing and amusement.

Then there is the difficulty of manpower

(Continued on page 28)

AT the end of this year, the first of Scotland's great hydro-electric schemes will begin operation at Loch Sloy. At the other end of the Empire, Australia tackles a far-reaching plan to harness her water power and irrigate her dry lands; her problems are described by

ARTHUR MORLEY

BLOW-OFF

Unique Power Station at Ragged Chute Shared Glory Of Boom Days When Cobalt Was Greatest Silver Camp

by
Harry M. Blake
Hydro News



TO BE—for a while yet, anyway—and yet how close to **not to be!**

Hydro's air compression plant at Ragged Chute on the Montreal River was blowing off in sheer joy and relief as we approached. For another postponement of the sentence of elimination which has been hanging over its head since 1945 had just been announced. And what a blow-off it was! The plant seemed anxious to show us that it was no mere museum piece, that it was still full of life and vigour and that its capacity was **really** and not just **theoretically** equal to that of any 5,500 horsepower hydro-electric station the Commission had ever built or purchased.

The Ragged Chute plant was built in 1910 to serve the silver mines in the Cobalt district. Water enters the plant from the river, passes the head gates, through the racks and is delivered at the intake heads located at the top of the two intake shafts.

And now the air comes into the picture, It is introduced into each shaft through a set of 66 short vertical pipes 14 inches in diameter fixed to and discharging through the intake head. The device is adjustable vertically and is preferably set to locate the top of the air inlet pipes a few inches below the water level at the intake head. Passing down the intake shafts a vertical distance of 345 feet, the air is compressed as the water pressure increases. At the bottom the mixture is deflected along a horizontal tunnel for 1,000 feet, where, under low velocity, the air gradually escapes and eventually collects in an air dome at a pressure of approximately 125 pounds to the square inch. From this point it is conducted through a 24-inch pipe to the valve and meterhouse. The water passes up the outlet shaft, rising 298 feet to the tailrace level for discharge in the river some 47 feet below the intake water level.

When air pressure in the dome rises above normal, the water surface in the

(Continued on page 27)

This and That

SO, YOU don't believe in ghosts? You don't think this is going to be a true story? Don't jump to conclusions. Just stay with us . . . unless, of course, you would rather leave now. If you are going to stay, shut the windows and the door . . . it probably won't do much good outside of giving you a false sense of security . . . but do it any way . . . and lower the lights. That will help Chairman Bob Saunders to save electricity.

Incidentally, for the benefit of any skeptics, we have received official permission to tell this story provided we do not disclose the names of the people involved and the address of a "certain" house which, up to eight months ago, was haunted. The owner, who is widely known in newspaper circles, does not wish to have his place haunted by an influx of visitors. We also wish to state that this gentleman, who is a practical, hard-headed citizen has emphatically stated that he can substantiate all the facts associated with this story and that he has not only his wife and kiddies but friends who were witnesses of "an event" which transpired.

Now, do you still want to stay? O.K. Lower these lights and hang on to your chairs.

In a pleasant suburb to the west of Toronto stands a house which was really haunted. It was purchased by our friend. At the time of the purchase he did not know that the house was "occupied." But he did not have long to wait to learn the disturbing news.

Came the first night in the new home and the Westminster chimes had no sooner pealed the hour of 1 a.m. than things began to happen. There were noises . . . noises indicating that some person (or persons) had decided to have a nocturnal stroll along the hallway and down the stairs. The children began to cry and generally displayed a certain degree of agitation. Needless to say, neither our friend nor his wife felt that it was an occasion for making such remarks as "Pip! Pip! Company! How jolly!" Rather it was an event which seemed to call for meditation and extensive research. Unfortunately, two hours of research and searching for hidden passages did not bear fruit . . . except a lemon, as it were. And so the family retired again, each in a thoughtful mood. It was not an experience which is generally regarded as being conducive to the most refreshing form of slumber.

In the months which followed there were regular "visitations" right on the stroke of 1 a.m. which is apparently recognized as a time in keeping with correct protocol among socially conscious ghosts in matters relating to the haunting of houses. Needless to say, the unfailing punctuality of our particular ghost or ghosts in setting out for a stroll began to prove irksome, annoying and embarrassing to all concerned. In fact, it was even a little unnerving, especially in view of the fact that all efforts on the part of our friend and his wife to establish something in the nature of an entente cordiale with the "visitor" or "visitors" failed. The flesh, as it were, was willing, but the spirit was weak.

But, there came an evening! And, perhaps, this is pièce de résistance No. 1 of this story! The members of the family and some friends were seated at din-

by
The Editor

ner. Those who were seated in a position which afforded an excellent view of the staircase suddenly stopped eating and literally froze in their seats. This time the ghosts made their first personal appearance. There, walking sedately downstairs, side by side, was an old gentleman and an old lady. That's right, and if by any chance any of our readers should ever meet our friend and his wife, take a word of advice and don't try to tell them they didn't see two ghosts walk downstairs and through a closed door. There were witnesses—friends who were in to dinner that night and they all compared notes as to the description of the ghosts and the clothes they appeared to be wearing. These comparisons resulted in our friend discovering that they (the ghosts) were the people who had at one time owned the home which he had purchased!

But let's move along to pièce de résistance No. 2 and the coup d'état. This is where we strike a solemn and serious note. The "visitations" continued regularly at 1 a.m. and one night, our friend's wife, who was getting to the verge of nervous prostration, decided to act. It should be mentioned that our friend is of the Catholic faith and his wife is an Anglican. Well, there is a crucifix in the house. One night, after everyone had retired, the wife took the crucifix and went into each bedroom in the house, repeating the 23rd Psalm and then saying: "Lord, let there be peace in this house in the name of The Father, The Son and The Holy Ghost." Since that night, there has been peace in the house.

And that is the story which our friend related to us and one which, he says, he can fully substantiate.

AND NOW, to make belated but sincere acknowledgement to Eric Shulver of the Electrical Engineering Department, and Ted Carson of the Salvage Department on Bloor Street West, for very kindly coming to our assistance in helping one of our lady readers identify a plant. Both these gentlemen, who are apparently highly reliable authorities on botanical and horticultural matters, are in agreement that the plant discovered by the lady in question is a Star Cactus. Thank you again, gentlemen. You were most helpful.

HERE'S A thought we would like to pass along to these readers who do not intend to hang on to their Christmas cards. Don't toss them into the incinerator. Send them along to the Hospital for Sick Children where many little patients will get hours of fun making all manner of interesting things from these cards. Just one tip, send along your most colourful cards.

ONE OF the best resolutions we could all adopt for 1950 is to look after our health. In this connection we have noted with more than passing interest some of the literature issued by the Health League of Canada in connection with National Health Week which, this year, is being observed January 29 to February 4. The work of the League is to be highly commended for we cannot have a healthy, progressive nation if we do not have a healthy people. This year's slogan, adopted by the League, is very appropriate—"The First Wealth Is Health."



A New Record?

William Henderson Completes 24 Years Of Continuous Service As Chairman Of Waterloo P.U.C.

IT would appear that William Henderson of the Waterloo Public Utilities Commission has established a record for continuous service as chairman of a municipal commission. When he retired at the end of 1949, he had completed 24 consecutive years of public service to Hydro and the people of Waterloo. We are deeply indebted to W. G. Woods, the Secretary - Treasurer of Waterloo Commission for directing our attention to Mr. Henderson's exceedingly interesting achievement. (Incidentally, if any other municipal Hydro officials should know of similar records of service we would like to hear from them in order that Hydro News may have the privilege of paying tribute to such men.)



Wm. Henderson

We would like, also at this time to send a verbal orchid to Mr. Woods for the very fine job he did in preparing the data on Mr. Henderson. All the essential facts were recorded in most readable form. Even a picture was included. We suspect that he must have been a newspaperman at one time for we find that we can use his copy without editing! The material prepared by Mr. Woods follows:

"Born in Gardenstown, Banffshire, Scotland, on January 5, 1876, he (Mr. Henderson), came to Kitchener, then Berlin, in 1910, later bringing out his wife and six children. He was a baker by trade, and worked in Berlin and Waterloo. He soon moved to Waterloo where he acquired a small bakery; this he quickly developed into one of the largest and best known bakery concerns in this part of the province. He is still President, but the business is now operated by his two sons, William and Joe.

"He was elected to the Town Council in 1920, serving as Councillor for one year, Reeve for two years, and Mayor for two years. Appointed to the Public Utilities Commission by the Town Council in 1925, he was made Chairman and served in that capacity continuously for the next twenty-four years, retiring at the end of 1949. His term of office was marked by many outstanding achievements, and the Commission grew and prospered with the community. Mr. Henderson became a well-known figure in Hydro and municipal circles, and he was well acquainted with the late Sir Adam Beck. His activities have extended into every phase of community life. He has always been a staunch Presbyterian, and is Past President of the K-W Rotary Club which he joined in 1930. He has been for many years a Director of the Waterloo Trust and Savings Co., and the Waterloo Mutual Fire Insurance Co., as well as being active in several other concerns. His retirement from this Commission is a matter of deep regret. Few men can retire with the knowledge of such a host of friends and well-wishers."

J. A. WILLIAMSON

A FORMER member of the staff of The Hydro-Electric Power Commission of Ontario, John Arnold Williamson, joined the staff of the Niagara Falls Hydro-Electric Commission four years ago as Assistant Manager and is now Manager.

Mr. Williamson served in the R.C.E.M.E. as a Captain for 2½ years during World War II. He is a graduate of the University of Toronto in the Faculty of Applied Science and Engineering and has a B.A.Sc. degree. He served the Ontario Hydro as a draftsman, electrician and engineer.

Mr. Williamson was born in Liverpool, England. He is married and has one son and three daughters. He is a member of the Lions Club, Community Chest and Association of Professional Engineers (Ontario, A.I.E.E. and I.E.S.).

JOHN W. COOK PASSES

JOHN W. COOK, age 67, formerly Superintendent of the New Toronto Public Utilities Commission, died recently He had served 36 years on the loca commission.

Mr. Cook was born in Cookstown and took an active interest in sports. In 1931 he was manager of the New Toronto Ladies' Softball Club when they won the Ontario Championship. He was a keen bowler and played with the Lakeshore Bowling League.

Surviving are his widow, the former Beatrice Allems; three daughters, Mrs George Elliott, Mrs. William Venner and Mrs. James Reid; and two sons, Gran and John D.

HYDRO FOR RESERVATION

During December, a canvass of all families of the Six Nations Reservation near Brantford was undertaken to determine the number of home-owners interested in receiving rural Hydro service. At present, approximately 1,200 homes within the Reservation are not being served by Hydro. If a sufficient number of applications for service are received, the necessary construction program is expected to commence next year and extend over a period of several years. According to present plans, Hydro service will be provided by four neighbouring rural operating areas: Brantford, Saltfleet, Simcoe and Cayuga.

SUB-COLLECTION AGENCIES POPULAR WITH CONSUMERS

Sub-collection agencies continue to be popular with customers of the Sudbury Hydro-Electric Commission, with the city hall at the head of the list. According to recent reports, 4,711 consumers paid their accounts at agencies located at key spots in the city during July. Each of the six agencies, except the city hall, is paid a commission, based on the amount it collects.

ALL-TIME HIGH

Brantford's use of Hydro power has climbed to an all-time high, Assistant Hydro Manager Norman Grandfield reported recently. During November, 1949, peak demands increased almost 30 per cent over November, 1948, in this municipality.

Classified Ads

FOR SALE

Salvage Equipment

The Commission's Salvage Deparment offers the following items of material for sale. Much of this equipment has been reconditioned and is in first class condition. Prices will be found to be most attractive:

Distribution Transformers

A large number of 3 K.V.A., 25 cycle, 2300/230-115 volt distribution transformers, complete with pole mounting plates. These transformers have been thoroughly overhauled and tested and are offered with a one year guarantee—replacement if not entirely satisfactory.

Current Transformers

A quantity of both indoor and outdoor current transformers of various ratings.

Potential Transformers

A quantity of indoor potential transformers of various ratings.

Insulators

Quantities of completely serviceable insulators of the following types:
CP105 side tie porcelain.
Insulators interchangeable with CP151.
Various sizes of porcelain wall tubes.

Lead Cables

A quantity of lead cables of various sizes and lengths—also some single conductor pot heads.

Condulets

A large quantity of condulets of various sizes.

Switch Gear

Various sizes and ratings of indoor disconnect switches.

Tower Steel

Quantities of new and used tower steel.

The material listed above is only a fraction of the serviceable equipment available at reasonable prices from Salvage Stores. We offer a cordial invitation to any interested party to inspect Salvage Stores and consult with our staff.

For any information including particulars of material available, price, etc, please contact:

The Salvage Dapartment,
Hydro-Electric Power Commission of Ont.,
1379 Bloor Street, West, Toronto.
Phone: Bell—Kenwood 9275
Automatic—2134

NEW COMMISSIONER

With four seeking election to the seat on the Chatham Public Utilities Commission left vacant by the retirement of Fred Biette, Chatham voters chose Tom Howard to represent them for a two-year term. He will serve, during 1950, with Commissioner Stan Thomson and Mayor-elect W. George Kerr, K.C.

START IN SARNIA

First Group Of Hydro Consumers Converted To 60 Cycles On January 11

ON January 11, Hydro's great Frequency Conversion Program was launched in Western Ontario when the first consumers in the Sarnia area received their initial deliveries of 60 cycle power.

Included in the first group, which is located in the Corunna and St. Clair districts of the Sarnia region, were 81 domestic consumers, eight commercial and two summer consumers. They were the forerunners in the program of cycle standardization that will continue in the Sarnia area until next September. By that time it is estimated that all of the 19,711 Hydro consumers in the area will have been converted to 60 cycle power.

The first cutover on the 11th inaugurated a regular series of weekly cuts which will be stepped up to two a week by February. Headquarters for the Conversion Program in the Area is at Sarnia where Hydro's Frequency Conversion Division has set up its Area Office at 155 Wellington Street with Horace Snyder as Area Project Manager. D. L. G. Beattie is the Area Information Officer. Any questions or problems arising out of the changeover will be handled through this Area Office, and all consumers have been requested to direct any queries they have there, rather than to the contractor or the local Hydro office.

Sarnia is the second region in Southern Ontario's "25 cycle island" to undergo the conversion to 60 cycles. The principal reason for its position near the top of the schedule is the availability of 60 cycle power from the nearby steam plant of the Polymer Corporation. There, surplus steam is being made available by Polymer to Hydro, to generate power from equipment installed by the Commission.

The initial area to be converted was Scarborough and East York on the eastern outskirts of Toronto, where 60 cycle power was available from the Scarborough Frequency Changer Station. The program began there last May and is continuing, with approximately 6,600 consumers converted to date. The entire frequency standardization is expected to take from ten to twelve years and involves the conversion of over 800,000 consumers over an area of some 12,000 square miles.

BOUQUET TO LINE CREW

In a letter expressing appreciation, a grateful driver pays tribute to a Hydro line crew for assistance received when he had car trouble recently.

The crew in question was Acting Foreman James Wood, Truck Driver Eugene VanClief and Linemen Elwood Chantler, William Botting, James Edsall and Ernest Thompson. After working on a three-phase circuit between Emsdale and Burks Falls, the crew were returning to Huntsville and as they approached the Big East Bridge, about four miles north of Huntsville on Highway No. 11, they noticed a car in the ditch. They stopped and assisted the driver to get his car on the highway so that it was possible for him to proceed to Hamilton.

The letter received is as follows:

"Mr. Robert H. Saunders, Chairman,
Hydro Electric Power Commission of Ontario,
TORONTO, Ontario.

"Dear Sir:

"Early last evening the writer met with an accident on Highway No. 11 just north of Huntsville.

"Through the kindness of a number of your men in Truck No. 5081 we were again permitted to resume our trip.

"So often people are inclined to report negligence and discourtesies, this time I would like to go on record of handing a bouquet to those Hydro employees.

"With no thought of overtime, as they were obviously through their day's work, they definitely went out of their way to assist in every possible manner to alleviate our distress in the unfortunate accident.

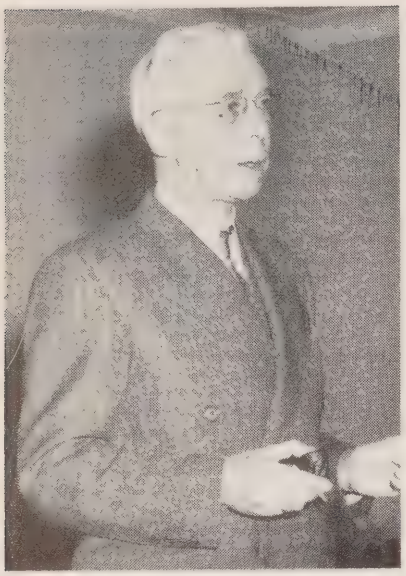
"Would you kindly convey to the Foreman and crew our deepest appreciation for kindness and assistance so willingly given.

"Thanking you, I remain,

"Yours very truly,

HYLTON LONG SALES LIMITED
"(Sgd) Trevor J. M. Thompson."

HEADS ENGINEERS



E. V. BUCHANAN, General Manager of London Public Utilities Commission, has been elected president of the Association of Professional Engineers of Ontario. Membership in the association numbers over 7,000 graduates and 3,500 student engineers. Mr. Buchanan has also been named head of one of the executive groups of the association.

WINDSOR "ON THE AIR"

The Windsor Utilities Commission has called for estimates to equip some of its service trucks and cars with a radio communication system. Early last year the Commission was granted a radio short wave channel. Now it plans to install radio-receiver equipment in certain of its vehicles. Purpose of the move is to provide better service, especially in emergencies.

HONOUR FELLOW EMPLOYEE

WILLIAM SHUTE, who has been associated with the development of Hydro in Sudbury for the past 28 years and an employee of the local commission since it came into being in 1936 has worked every day for the past seven years without losing any time through illness. This record was recognized recently when Secretary-Manager R. H. Martindale presented a wrist watch to Mr. Shute on behalf of his fellow workers. Mr. Shute, who was born in 1874 and who is still enjoying good health has been retired on pension as of December 1st last, and is now residing in North Bay, Ontario.

In The Editor's Mail Bag

STEAM POWER IN TORONTO

WE are indebted to William Volkman, Research Adviser, on the staff of the Hydro lab for directing our attention to some interesting facts and dates concerning steam power deliveries in Toronto. His letter follows:

The Editor:

"I note in the December issue of the Hydro News, in the article on Scarboro Steam Plant, certain information in regard to steam power deliveries in Toronto in which I note certain discrepancies with respect to dates and plant locations. I wish, therefore, to give you the following information in regard to steam power in Toronto.

"The Toronto Railway Company whose franchise expired on September 1, 1921, maintained a steam plant at Front and Frederick Streets in which were located six 500-800 Kw. D-C generators driven by reciprocating steam engines. This plant was gradually removed from regular operation during 1907 with the advent of 25-cycle power from Niagara Falls by using 1000 Kw rotary converters for conversion to direct current, after which it was used for emergency purposes only except during the winter of 1917-18 when it was used as a peak load plant. It was dismantled by the TTC in the early 1920's.

"The Toronto Electric Company, taken over by the HEPC in the purchase of the Toronto Power Company as of December 1, 1920, maintained a steam plant at the foot of Scott Street on the waterfront in which were installed one 10,000 Kva and one 7,500 Kva horizontal Westinghouse steam turbine generators and two 2,000 Kva vertical CGE steam turbine generators, all 25-cycle. The horizontal units were operated for power purposes during 1917-18 with an output of approximately 14,000 Kw to carry power loads during the First War.

"Sixty cycle steam generation was started many years earlier and was supplied by reciprocating engines at Scott Street and Teraulay Street stations now operated by the THES. This equipment was not used except in the case of emergency after 1907 or 1908.

"The first delivery of power from the Electrical Development Company plant at Niagara Falls to Toronto occurred in December, 1906, and during 1907 frequency changers were placed in the Terauley Street station to carry the 60 cycle load at 62½ cycles. Some of these are still in operation, The steam equipment at Teraulay Street was completely dismantled during 1912. A part of the 60 cycle equipment at Scott Street station was dismantled and reinstalled in the plant of the London Electric Company, London, Ontario, during 1914-15. It was finally disposed of when this Company ceased operation.

"I am merely giving you this information as a matter of record while some of the individuals who were familiar with the operation are still available."

IMPROVED VOLTAGE

R. B. Chandler, Manager of Port Arthur Public Utilities Commission, reported recently that the area in the city served by its revised 4,000-volt feeder lines is being expanded rapidly. Charts taken by the local commission indicate that in the most remote area voltage has been stepped up approximately 16 volts with the result that consumers now have greatly improved lighting and cooking service at all times. The bulk of the city served by the Cameron Street substation, Algoma Street substation and John Street substation is now on a 4,000-volt feeder basis with a decided improvement in voltage regulation.

HAMILTON "AT HOME"

Friday, February 17, is being carefully noted by members of the Hamilton Hydro-Electric System. That is the date of the Annual At Home to be held in the Royal Connaught Hotel at 9 p.m. Committee in charge are William Vivian, Betty Logan, Pat Carey, Marjorie Brind, Stan Street, Art Craig, Gordon Smith and Betty Jowett.

J. E. TECKOE, Sr.

NOW acting in an advisory capacity, John Edward Teckoe has been associated with the Niagara Falls Hydro-Electric Commission for 37 years.

It was in January, 1913, that he joined the staff. Mr. Teckoe gave continued and valuable service until he retired as Manager of the Niagara Falls Hydro-Electric Commission on December 31, 1945, when he was retained as a consultant.

Born in Shrewsbury, England, Mr. Teckoe was educated at Birmingham and obtained an honour certificate in Arts and Science. He is a member of the Professional Engineers (Electrical).

Mr. Teckoe is married and has one daughter, also a son, J. E. Teckoe, Jr., who is Manager of the Galt Public Utilities and a Past President of the A.M.E.U.

BLOW-OFF

(Continued from page 22)

horizontal tunnel is gradually depressed and surplus air is vented through the blow-off pipe. They told us that sometimes the pressure was high enough to shoot a man over the tree tops at the other side of the river.

Piping Laid In 1910

The distribution system from Ragged Chute consists first of all of 8.75 miles of 20-inch seamless steel pipe running to Hydro's Cobalt transformer station. From the transformer station various lengths of pipe branch out in all directions, connecting with the silver mines. The piping was laid in 1910 and most of it has remained uncovered and exposed to the weather for thirty-nine years. Nevertheless, it is reported to have stood up well to this very vigorous test and to be still in good condition.

Hydro Station Suggested

Ragged Chute is, in spite of its name, one of the loveliest waterfalls on the Montreal River. It has long been regarded by the Commission as a potential hydro-electric site and investigations are said to have shown that a station could be built there with a capacity of 7,500 kilowatts or 10,000 horsepower, which would be more than the equivalent of present air power installations. Such a station would fit in, too, with the program of integration and rehabilitation now being carried out by the Commission in connection with the properties it acquired from the Northern Ontario Power Company in the Timiskaming district in 1944.

Mines Use Air Power

On the other hand, the availability of the compressed air supply is said to have been a major factor to the economical working of the Cobalt Camp during the past 17 or 18 years. Lessees have been able to work the old silver mines by means of pneumatic equipment with a very small initial capital investment. It is pointed out that, were the air supply discontinued and supplanted by electric power, it would mean a very large initial capital investment for future lessees as well as a problem for present consumers. With silver mining in the Cobalt area beginning to stir to a new activity, the Commission has decided, in the present interest of consumers, to continue to maintain its air plant on the Montreal River.

Early consumers of the Ragged Chute plant included the most famous silver and cobalt mines on the face of the earth—names which were flashed around the world and heard above the tumult and clamour of "'Change" and Wall Street. There will be some who think it is a pity that the Ragged Chute air plant which shared their glory, did not go with them to make place for a more modern type of power development. But perhaps it will renew its youth with even more dazzling companions. Time — and the price of silver—alone hold the answer. In the meantime Chief Operator "Pete" Bonin and his assistant Fred Ewing are reviving memories.



"JONES, THERE, IS OUR STAR SALESMAN · REALLY A LIVEWIRE!"

NEW CHAIRMAN OF "FALLS" COMMISSION

★

A RETIRED employee of the Ontario Hydro, Stanley E. Thomson, B.A.Sc., professional engineer, formerly Superintendent of the Toronto Power plant, has served as a member of the Niagara Falls Hydro-Electric Commission since 1947. He was Chairman in 1948 and has just been re-elected to that position for 1950.

Mr. Thomson was associated with the early days of power development in Niagara Falls having been on the staff of the Electrical Development Co. when it was taken over by the Toronto Power Company. He was on the staff of that private company when it was purchased by Hydro in 1922, and was appointed Superintendent of the Toronto Power plant, a position which he held until his retirement in 1947.

Mr. Thomson assisted in the construction of the Toronto Power plant, one of the original power developments at Niagara Falls.

He recalls that it was "a great day" when the first generator was started in the fall of 1906, giving Toronto its first 8,000 kilowatts of electrical energy from Niagara Falls.

He was born in Blenheim, Ontario, and attended the Blenheim and Ridgetown Collegiate Institute and the University of Toronto, graduating in 1905 with the degree of Bachelor of Applied Science in Electrical and Mechanical Engineering.



S. E. THOMSON

Mr. Thomson served for 27 years on the Niagara Falls Collegiate Vocational Advisory Committee and on the Town Planning Commission.

He is married and his special interests are astronomy and the growing of ornamental evergreens.

NEW LINKS

(Continued from page 12)

by its ability to mine and treat low grade ores. In addition to the gold, and some silver, of course, Mr. Row told us that some 530 tons of tungsten ore had been mined during the war.

Kerr-Addison is now using a Hydro load of about 7,000 kilowatts. Virginiatown, the mining community which has grown up around the mine has been supplied with power purchased by the Commission from a private company. Arrangements have, however, been made for Hydro to supply its own 60-cycle power from Kirkland Lake.

Kerr-Addison is said to have one of the most modern hoist rooms in Canada. There are two 2,250 horsepower motors driving the shaft for the hoisting drums.

Northeastern Ontario is one of the world's greatest treasure lands. In its adolescent development electricity has played an important role. Now, as progress marches on with the steadier stride of knowledge and experience, Hydro will be called upon more and more. It will be asked to help solve ever-new problems of growth and expansion and to assist in the continued improvement of the working and living conditions of a people who are taking so large a share in building the bulwarks of our national prosperity.



KNOWING THAT Hydro Chairman Robert H. Saunders was "dreaming of a wet Christmas" to help the power supply situation, members of the Press Gallery of the Ontario Parliament Buildings decided to do something about it. And so, at a pre-Christmas get-together, Don O'Hearn, President of the Press Gallery (centre), presented the Chairman (right) with gaily-wrapped bottle of Niagara water. While deeply touched by the gesture, Mr. Saunders exemplified the Christmas spirit and turned the bottle over to Premier Leslie Frost of Ontario (left) with the suggestion that the contents might be helpful to New York where water has been in short supply.

GRATIFYING RESPONSE

Diesels, Early Closing Bring Results As Firms, Municipalities Save Power

RESPONSE was immediate and gratifying to the appeal from Chairman Robert H. Saunders for voluntary conservation of electricity during the recent critical power shortage period.

He expressed his sincere appreciation of the Commission for the fine response on the part of municipalities and individual consumers in helping save power in every way possible. "With that kind of co-operation," declared Mr. Saunders "we should be able to get through the ensuing weeks of the present winter with little or no inconvenience to anyone. All indications point to our being out of the woods this year in the matter of power supply."

Mr. Saunders' appeal, directed to all power consumers in Southern Ontario, emphasized the temporary, but serious, shortage of power, particularly during the peak period from 4:30 to 6 p.m. In conjunction with the Mayor's Committee for Power Conservation of the City of Toronto, he made a special plea to business offices in downtown Toronto to close early whenever possible, turn out lights, or conserve power in any other way feasible.

A survey made by Hydro News reveals that immediate co-operation was forthcoming both from municipalities and from individual firms.

Several municipalities in Southern Ontario made use of diesel units up to 14 hours a week, relieving the load on those areas by as much as 16,000 kilowatt-hours per day. It has been estimated that the total saving effected by these municipal diesel generating units amounted to some 80,000 kilowatt-hours daily.

Various methods of conservation were adopted by the business offices. Some firms possessing diesel units shut off their supply of power from Hydro from 4:30 to 6 p.m., and operated entirely on power generated on their own premises. Other buildings closed early and delayed the operation of their cleaning staff until after the peak period. In many cases, the engineers and electricians in charge of building maintenance acted as power wardens, voluntarily making the rounds of the buildings to see that every unnecessary light or machine was turned off.

Although the rain which fell during the Christmas holidays gave a tremendous boost to the Commission's power resources, Chairman Saunders has emphasized that the crisis is not yet over, and that voluntary conservation is still imperative.

POWER

(Continued from page 21)

and materials. Concrete and machinery is being imported all the way from Britain.

Many of the workmen, according to Government sources, will be brought all the way from the United Kingdom and Europe—because Australians cannot stand the extreme cold of the alpine winter. Workers are being recruited now.

The Tumut River scheme is first on the list. When completed, in six years it is hoped, work will be pushed ahead on the other rivers of the area — the Tooma, Murrumbidgee and Murray. The total electric output when all these have been harnessed will at least be 1,720,000 kilowatts which will be of incalculable benefit to Australia.

It probably will be 20 years before the last brick is laid and the last nut tightened, and the completed cost will be in the vicinity of £300 million. But the results should be worth many times this.

British scientists are already investigating establishment of strategic factories and aluminium and other light-metal plants in the inaccessible alpine region. A great deal of power will be taken overland 300 miles to Sydney and about 250 miles to Melbourne. It can be distributed at half the cost of the present coal-produced electricity.

It is hoped, also, to take the power northwest into out-back New South Wales, to help create large inland industrial and commercial cities.

More People

Authorities believe that the sale of electricity will defray the cost of the whole undertaking — and that the increased production from irrigation will therefore be pure gain.

The greatest benefit of all, however, was made clear this week in an official Government statement from Canberra:

"The Federal Government believes that the completed Snowy scheme will be one of the greatest single factors enabling the country to carry a much larger population."

In other words, it will help Australia achieve quickly the 20 million population she believes necessary to economic stability and strategic safety.

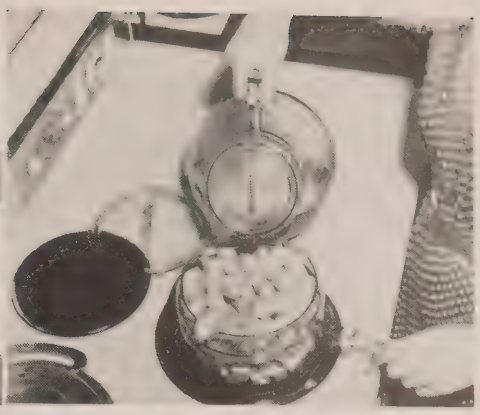
3,000 CONSUMERS

Approximately 3,000 consumers are being served by the Township of Brantford Hydro-Electric Commission, according to Chairman Roy Pierson. Outlining the growth of the Commission, Mr. Pierson said the township system was the 38th largest in Ontario and 25th largest in the Niagara district from the standpoint of the number of consumers served. Plant capital of the Commission at the present time represents a total of over $350,000, Mr. Pierson stated.

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



The Swedish turnip or rutabaga, although originally introduced by Sweden to Great Britain, hence to Canada, and to American neighbours, it is now known as the Canadian Rutabaga, and today Ontario ships more than 5,000 cars annually across the line. It therefore seems strange that our home folk do not appreciate the merits of the Ontario-grown rutabaga.

Buttered turnips: Drop prepared turnips in a small amount of boiling salted water, cover closely and bring back to the boil as quickly as possible. Cook until crisp-tender. If turnips have a bitter flavour, a small amount of sugar (1 tsp.) may be added. Cooking time should be about 15 minutes for 1½ inch cubes of white turnip, or about 25 minutes for 1½ cubes of the yellow. Drain and add ¼ cup butter for 4 cups turnips.

Honey turnips: Into a greased casserole, place leftover cubed turnips. Add ½ cup honey and bake in electric oven at 350 degrees for 30 minutes. Baste several times.

No appetite! Start your day with fruit or fruit juice — it increases your appetite, stimulates digesitve juices and prepares your body for the rest of the meal — and is a "preventive aid" for the day.

Valentine treats for February 14th may be a family affair. If you have a large round mould, or better still a heart-shaped one, use three kinds of jelly powder and put cherry liquid in first and chill; then lemon, and chill; finally lime, and chill. Unmould and decorate with whipped cream put through a pastry tube. Using the pin point end of a decorator, the design may be "Your Valentine."

Make a dancing snowball centrepiece for Valentine parties. Pour one quart of cold water into a clear glass rose bowl and add red colouring to tint it. Stir one tablespoon citric acid into water, then slowly add 2 tablespoons baking soda, then drop a handful of mothballs into the bowl. Add a little more citric acid if the balls become lazy.

In Mexico they call Savoury Rice and Chicken, Pollo Con Arroz. The chicken, cut in serving pieces, is rubbed with a mixture of ½ cup flour, 1½ teaspoons salt and 1 teaspoon paprika. Brown pieces in hot fat, then arrange in casserole. Cook 1 clove, minced garlic and a sliced onion in remaining fat, then add to casserole. Sprinkle in 1 cup rice. Pour 4 cups seasoned canned tomatoes on top and bake for 1½ hours at 350 degrees. Serves 5.

CARROT PINWHEEL MEAT LOAF

1 pound ground beef
⅓ pound minced pork or 4 pork sausages
1½ teaspoons salt
¼ teaspoon pepper
1 onion, minced
1 egg
1 tablespoon milk
1 cup soft bread crumbs
1½ cups shredded raw carrots
2 tablespoons minced parsley

Thoroughly mix all ingredients except carrots and parsley. Roll on sheet of wax paper with wet rolling pin to make rectangular 6 inches wide and about ½-inch thick.

Spread mixture with carrots and parsley, roll up like jelly roll. Place in shallow baking pan and bake in moderate electric oven at 350 degrees for 1 hour.

Here we go back to not-quite-so-sweet morsels! Try crisp, sugarless, chocolate chip cookies for one thing. Combine ½ cup shortening, ½ teaspoon vanilla, ¾ cup light corn syrup. Add 1¼ cups all-purpose flour, ½ teaspoon salt and ½ teaspoon soda. Stir in 7 ounces semi sweet chocolate and ¼ cup nuts. Drop from spoon on greased cookie sheet. Bake in electric oven of 350 degrees for 15 minutes. Makes 4 dozen.

Make no mistake! When you boil marmalade mixture, never cover, as it tends to boil over quickly.

A small amount of water and a well fitted cover is best vegetable cooking method. Avoid wasting electricity by turning electric element from High to Low when vegetables begin to boil.

Quick topper: Dip cooled cup cake tops in corn syrup, then in shredded cocoanut. Dip fresh baked tea biscuits in corn syrup and sprinkle lightly with cinnamon.

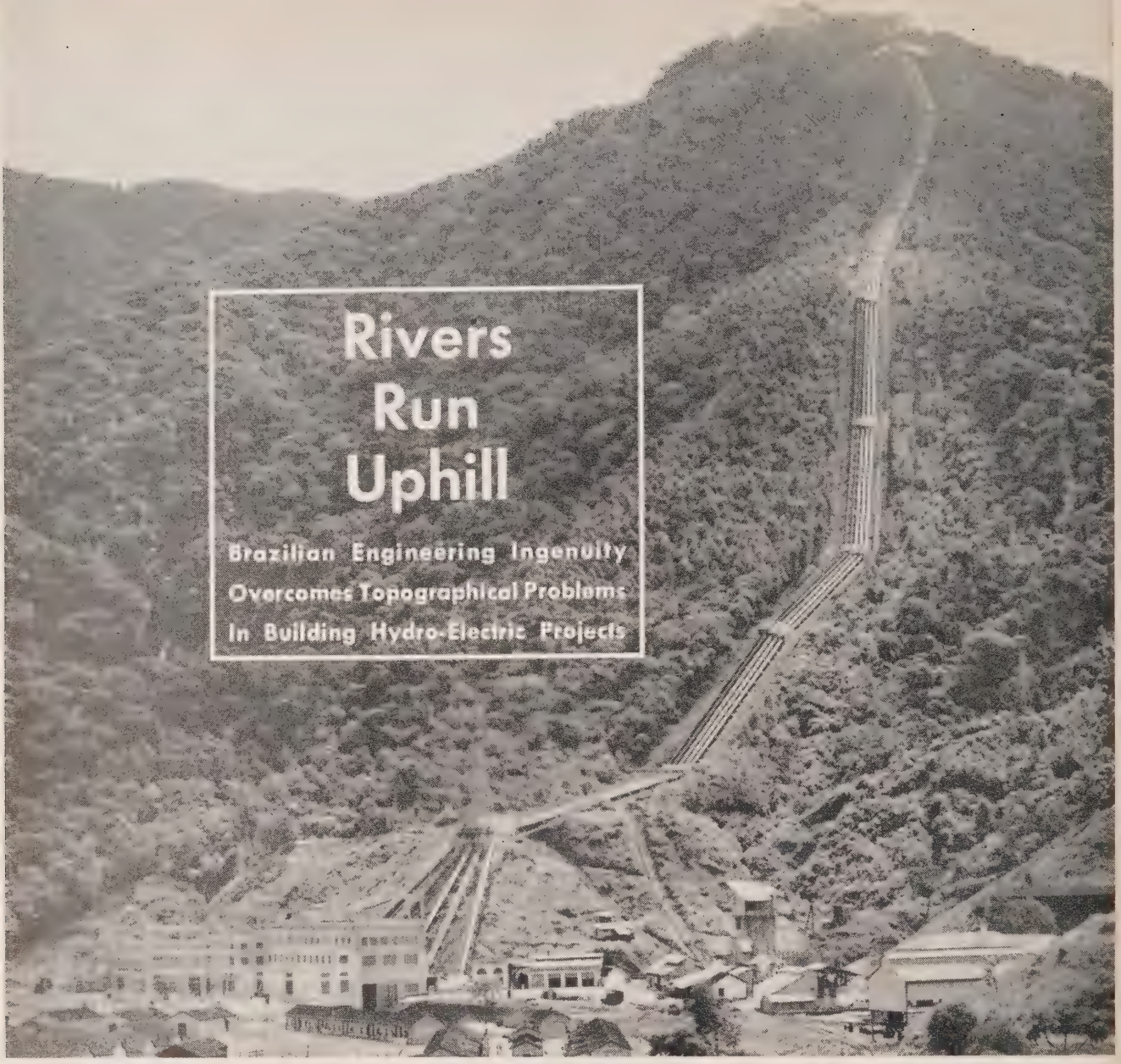
Something different in dressing table skirts may be made from a sophisticated taffeta evening dress that is outmoded. Bind hemline and front split in red rayon. You can buy blue-red tassels and scatter them on the material.

In making marmalade, be sure the fruit is not over-ripe. When you cook 6 oranges, 1 lemon with 7 lbs. sugar and 5 pints water, boil until it is about half the amount. This will take about 1 hour. Test for "jell" stage, then cool for 1 hour before it is bottled in sterilized jars.

The raw oyster is one of the simplest things to digest. With this in mind, we try to cook the oyster only long enough to heat it through. An overcooked oyster becomes tough and hard to digest.

Did you know that the oldest known glass milk bottle was made in 1866 and that in 1898 they used square milk bottles in the United States. In 1900 the amber glass bottle was designed to keep out harmful rays of the sun. Not until 1918 did we have the quarter-pint milk bottles. Perhaps the coloured glass will be used again in the near future.

Cooking for two can be wasteful or monotonous so I try as much variety as possible and still take short cuts. With my muffin batter I make every two muffins different, in a set of eight muffin cups. Put chopped raisins in two, put a tablespoon of honey over two, a tablespoon of nuts in bottom of two and leave two plain.



Rivers Run Uphill

Brazilian Engineering Ingenuity Overcomes Topographical Problems In Building Hydro-Electric Projects

NATURE posed a problem for Brazilian engineers when they decided to build hydro-electric power plants. The topography of the country is such that the mountains are near the coast and many of the rivers run inland, levelling off to an extent unpracticable for hydro projects.

Drawing on their ingenuity, the engineers determined to make the rivers run uphill and over the tops of the mountains so as to make full use of the sharp drop from mountain-top to coastline. To this end they built dams and reservoirs and installed reversible pumps which could also be operated as generators.

This remarkable engineering feat has accomplished two purposes. Besides providing rich sources of water power, which stimulated Brazilian industry and thus gave a tremendous fillip to the country's prosperity, it has drained many hitherto useless areas of land, making them available for agricultural or industrial purposes.

Serra Development

A good example of this is the Serra do Cubatao hydro-electric power development, located between Sao Paulo and the port of Santos, in southern Brazil. Largest hydro power development in Latin America, it has a static head of 2,358 feet from the top of the mountain, and has a capacity of close to half a million horsepower, produced by six units. Power is transmitted from this station at 88,000 volts, the maximum transmission distance being about 45 miles.

Construction of the Serra development was begun in 1924, and the first two units were placed in service in 1928. Preceding the actual construction of the plant was the erection of two pumping stations, several reservoirs, canals, and a surge tank to take care of excess water.

A series of dams and canals was constructed which reverses the natural flow of the river and forces the water over the divide into a large reservoir. Thence it is discharged into a smaller reservoir through a cut in the lower part of the divide, the variable head of up to 60 feet being utilized by three turbines, each of 7,000 horsepower capacity. The smaller reservoir is connected by tunnels and a siphon to a surge tank on the summit of the mountain, and from here the pipe lines descend the 2,300-feet to the powerhouse at the bottom.

Principal users of power from the Serra development are the city of Sao Paulo and the port of Santos. The former is the largest and most rapidly expanding centre in southeastern Brazil, and the latter is the country's chief seaport, from which half the world's coffee is shipped.



PRESENTING RADIO and plaque to Malton Convalescent Hospital of Workmen's Compensation Board is Bert Merson, Vice-Chairman, Toronto Hydro-Electric System. Radio is gift from Toronto Hydro employees in memory of the late Joseph Gibbons. Also present are Ian Campbell, Superintendent; E. M. Ashworth, Manager, THES; E. E. Sparrow, Chairman, WCB; A. M. Barnetson, Chairman, Employees' Welfare Fund, THES; Dr. D. G. Galbraith, Vice-Chairman, WCB; Dr. R. Hylton, medical director.

UNTIRING EFFORTS REMEMBERED

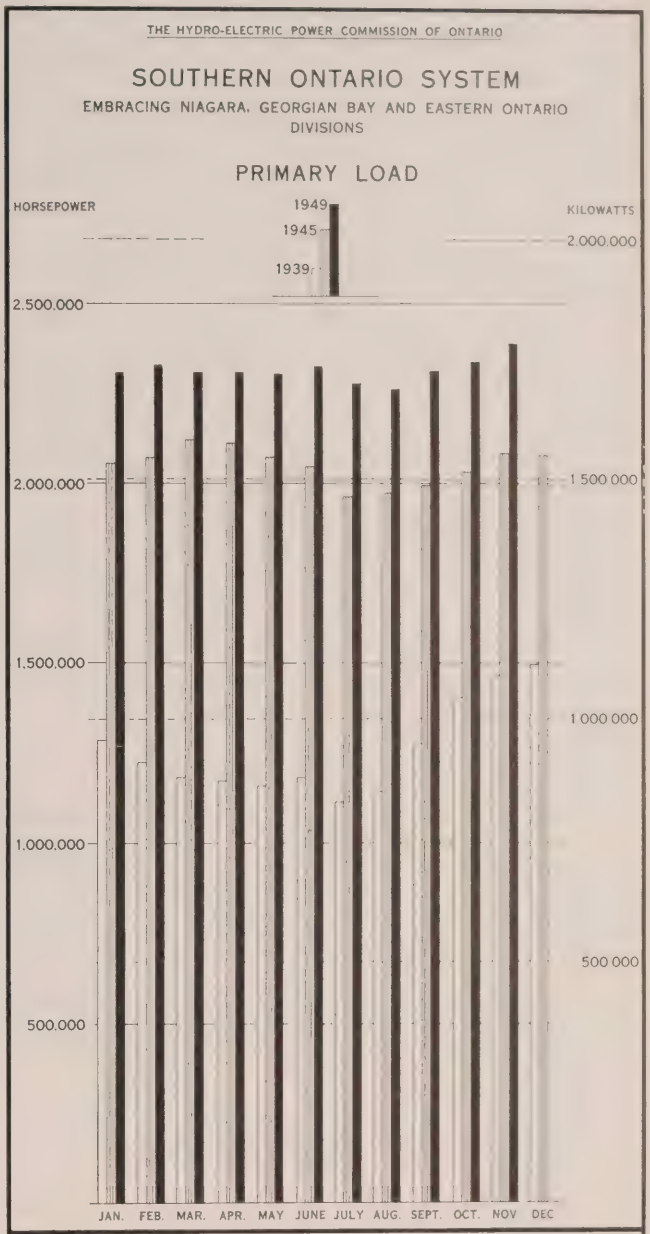
Floor Model Radio Is Gift Of Toronto Hydro Employees To W.C.B. Hospital In Memory Of Joseph Gibbons

PATIENTS in the Malton Convalescent Hospital of the Workmen's Compensation Board received a special present this Christmas. It was a floor-model radio, gift of the Toronto Hydro-Electric System Employees' Charitable and Welfare Fund in memory of the late Joseph Gibbons, an active trade unionist and Chairman of the Toronto Electric Commissioners from 1930 to 1946.

Vice-Chairman Bert Merson, of the Toronto Hydro, who officially presented the radio, pointed out the great work done by the late Mr. Gibbons, "whose untiring efforts so greatly contributed to the legislation initiating Workmen's Compensation in Ontario."

Replying to Mr. Merson, E. E. Sparrow, Chairman of the Workmen's Compensation Board, expressed the thanks and appreciation of the patients and staff members of the hospital, and also of the members of the Board, for the gift. "This," he said, "is an example of the co-operation so dear to the hearts of patients and staff. It is fitting that we should have a reminder, in this radio, both of the friendship of the Toronto Hydro employees, and of the man who was instrumental in getting under way the legislation designed for the advantages of the working people of this province."

Following the official luncheon, a tour was conducted through the hospital wards and clinic by Dr. R. Hylton, Medical Director, and Ian Campbell, Hospital Superintendent. Those present, including representatives of the Toronto Hydro-Electric System employees, officers of the Employees' Charitable and Welfare Fund and of the Workmen's Compensation Board, expressed keen interest in the valuable work being done in rehabilitating injured workmen and fitting them again as speedily as possible for active and profitable labour.



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW. NOVEMBER 1949	MAXIMUM 20-MINUTE PEAK KW. NOVEMBER 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System...	1,988,090	1,784,040	+ 11.4
Thunder Bay System.....	169,108	132,735	+ 27.4
Northern Ontario Properties.	221,185	211,515	+ 4.6
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System...	1,780,590	1,611,100	+ 10.5
Thunder Bay System.....	174,608	132,735	+ 31.5
Northern Ontario Properties.	224,685	237,985	— 5.6

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Army Bridges Gap (Bailey Bridge Across Petawawa River) — October
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STEM TURN

HYDRO News



POWER GUARDIANS

VOL. 37 FEBRUARY, 1950 NUMBER 2



THIS KIND OF TARGET PRACTICE
costs money

Yes, Junior scored a bulls-eye all right . . . right on your pocketbook. You won't be called on to replace it yourself, but as a citizen of Ontario and one of the owners of Hydro, you pay for the damage in the long run.

Actually, the insulators themselves are comparatively inexpensive. But the damage that can result from a broken insulator can cause serious power interruptions by cutting service on that line. Hospitals may be deprived of power at a critical moment. Machines in factories may be stopped. Homes and farms may be affected, too. There is the added hazard of fire and if the wire falls to the ground, property and lives are endangered.

When an insulator is smashed, a crew of men and a truck travel miles to locate and repair the damage . . . and that costs money. Hydro appeals to you to help to prevent the deliberate or careless destruction of Hydro property . . . *your* Hydro property.



The Hydro-Electric Power
Commission of Ontario

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER SHOTS

IMAGINATION and a sense of humour are as important to a photographer as a good camera and the skill to use his equipment in the most effective way. For example, take a look at this month's front cover picture taken by Commission photographer Burt Helling. From his vantage point Burt saw these oil circuit breakers at Leaside Transformer Station as "Power Guardians" keeping constant vigil. Another arresting picture, shown on the back cover, was secured by photographer Ted Johnston when he was in the vicinity of Huntsville.

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TUNNEL DEVELOPMENT

CONVENTION TIME

ONCE again it is convention time and it is the privilege of the City of Toronto to play host to the delegates who will be attending the sessions of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities. This year's dates are February 27 and 28 and March 1, the venue is the Royal York Hotel, Toronto.

Hydro News wishes to be associated with those who, at this time, extend a sincere, friendly and warm welcome to all delegates. In the rush of everyday events and human nature being what it is, the importance of these deliberations may not always be fully appreciated by the public at large. Those charged with the tremendous task of planning and completing all arrangements for these sessions believe that this annual event ranks not only as one of the most important in Ontario but as one of the oldest in Canada. This fact can be readily appreciated when it is remembered that this is the 41st gathering of these delegates.

In these times when all thinking people are deeply concerned over the ruthless suppression of democratic principles in many countries, the very name of Hydro in Ontario is synonymous with true democracy in action. It can be said without exaggeration that Hydro is not only a pre-eminent example of the finest type of public ownership in the world today, but it is an organization whose traditional efficiency of operation and continuing progress reflect the highest type of public service.

Down through the years, the people of Ontario have been fortunate in the men and women who have served Hydro not only with the Ontario Commission but on the commissions and staffs of the various local Hydro municipalities throughout the Province. The Ontario Municipal Electric Association, better known as the O.M.E.A., is made up of representatives of these local commissions. The Association of Municipal Electrical Utilities, on the other hand, comprises managers and engineers, the majority of whom are identified with local municipal utilities.

While district meetings of these groups are conducted during the year, the all-important event is the joint annual convention. The addresses, discussions and resolutions heard at the sessions are associated in a very vital way with the interests of Hydro. Taking part in the proceedings are men whose diversified talents and lives are dedicated to serving Hydro and the people of Ontario. Convention time provides an opportunity for the representatives of both the O.M.E.A. and A.M.E.U. to get together for an exchange of ideas and thorough discussions on a wide range of subjects. Some delegates are primarily concerned with the latest advances and techniques in the field of power generation, transmission and distribution and the latest information emerging from the research laboratory. Others are seeking the most effective ways and means of applying new advances in order that still greater benefits may be brought to the people who use Hydro power.

The history of Hydro is the story of untiring and unselfish public service given by men and women who are conscious of their high responsibility and of the very vital and intimate way in which Hydro affects the lives of the people of Ontario—in factory, office and home and on the farm.

The 41st annual convention of the O.M.E.A. and A.M.E.U. is an eloquent reminder of the fact that Hydro in Ontario is a co-operative enterprise in the finest sense of the word. The delegates taking part have made, and are making a far-reaching contribution to the onward march of Hydro.

TRAINEE OPERATORS are required to study diligently. Robert Ward takes advantage of time for study between rounds of duty.



ASKING QUESTIONS and getting answers is new way of instructing trainee operators. J. Hildreth quizzes 1st Operator Whitehead at Scarboro frequency changer station.

SOCRATES STARTED IT

by
C. G. W. Macintosh
Hydro News

HYDRO has dug into the ancient past for a "new" training plan for its operators. Twenty-three centuries old, the Socratic method of instruction has been revived and is being adopted today as the basis for the revised program of teaching Hydro's operators-in-training.

Asking questions and getting the right answers is the course that every operator-in-training is required to follow. He is provided with training manuals or study guides and with their aid duplicates the pattern of instruction laid down by the learned Greek philosopher, Socrates, in Athens in 400 B.C.

Hydro's student operators quiz veteran operators on the job in generating stations and in transformer stations, from a standard set of questions in the manuals



CLOSING BUS disconnect switches must be done carefully. Robert Ward, operator-in-training, performs this task at Queenston.

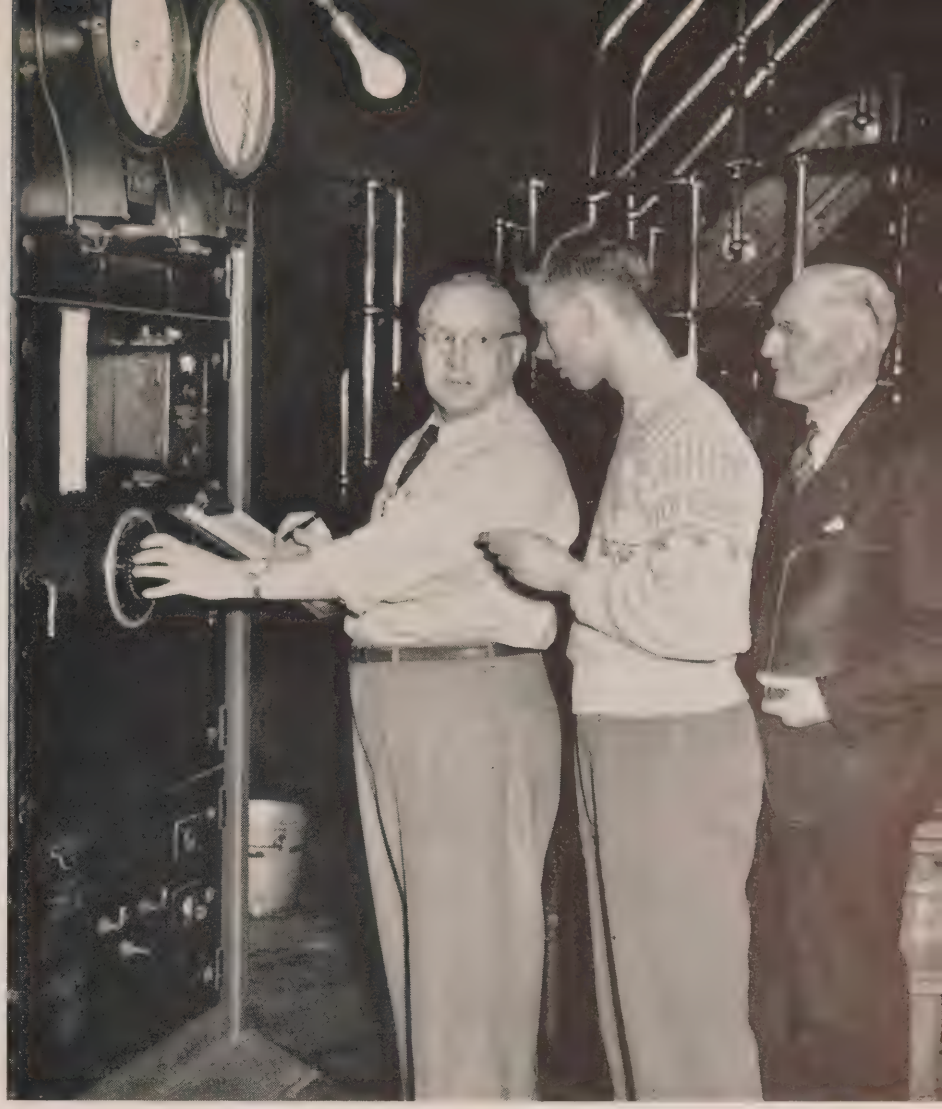
getting the correct answers and detailed explanations. The trainee learns by asking.

The novel idea behind the new study guides is that the operator-in-training will be dealing with questions that apply directly to the equipment and the duties that he is associated with at the time. It is a uniform training plan for Hydro's student operators across the whole province, since the program applies equally as well in any of the nine regions. And no matter where the operator-in-training is transferred, he carries on with his questioning and studies without interruption.

Trainees are carefully selected. Operators-in-training are accepted for service from ages 19 to 25, but if they have had previous training elsewhere, they are eligible to be taken on over the age of 25 years. A special provision also is made for ex-servicemen, who are hired up to 30 years of age. Educational requirements are moderate—at least two years' high school or technical school training—but the job is attracting young men with higher educational qualifications.

Every young man who is taken on by Hydro as an operator-in-training is hired on a probationary basis. He has up to six months to decide for himself, and for the Commission to decide, whether he is suited for the work. It is a job that requires men who can assume responsibility and who can make correct decisions—for operating is highly exacting work.

Being employed on shift work, an operator-in-training sometimes is without



GENERATOR TEMPERATURE readings are carefully recorded. W. Jack Sawyer, 1st Operator at Queenston, instructs Ken Kanmacher, trainee, as G. A. Ironside watches.



TAKING READINGS on generator panel at Queenston. Allen Birkett is guided in this duty by Jesse Bratley, assistant operator.

communication with the Chief Operator or 1st Operator. He must possess keen judgment and a knowledge of how to take appropriate action in an emergency, at times without the direct guidance of his superiors. That is why Hydro places so much emphasis on the thoroughness of the training of operators, and why that training is so exacting and broad in its scope.

Indeed, assuming responsibility is emphasized time and again in the operator's training. If he cannot learn to develop this dependable characteristic, then it is concluded that the would-be operator is in the wrong business.

As an introduction, the operator-in-training begins dealing with the questions in No. 1 and No. 2 study guides along with his work at the station and must complete No. 3 study guide and answer the questions by the end of six months. If it is mutually agreed then that he is qualified to train as an operator, he is required to register for a correspondence course. Formerly the correspondence course was the only method of studying and gaining theoretical knowledge. The latter course extends up to two and a half years, depending on the progress of the trainee.

Under the new Hydro instruction program the operator-in-training also continues with five more study guides and has six months to complete each. This will require upwards to thirty months, and the study guides take him through progressively more informative steps.

Every operator-in-training gets both transformer and generating station experience—a well rounded-out training. He is moved from station to station every six months to get this necessary training and experience.

Even when a trainee operator is moved to an isolated area, his studying goes on smoothly and without a hitch. In these remote sections, he finds all the home comforts and conveniences available in a city for Hydro has established colonies of modern homes in out-of-the-way places. In addition, operators in such areas are granted an upward adjustment in salary rate or an "isolation bonus." Frequently promotion is more rapid in these small, isolated stations because the trainee is given an excellent opportunity to learn all phases of operating work by close observance.

The new method of training young operators is reported to be proving successful and is said to be popular with the older, experienced operators, particularly 1st Operators and Chief Operators. A rating form is given to 1st Operators and they have been advised how to detect any undesirable qualities in the operator-in-training and the necessary remedial steps to take. Through this form, the trainee is rated fairly and accurately and Hydro soon is able to tell if the young man will make a successful operator.

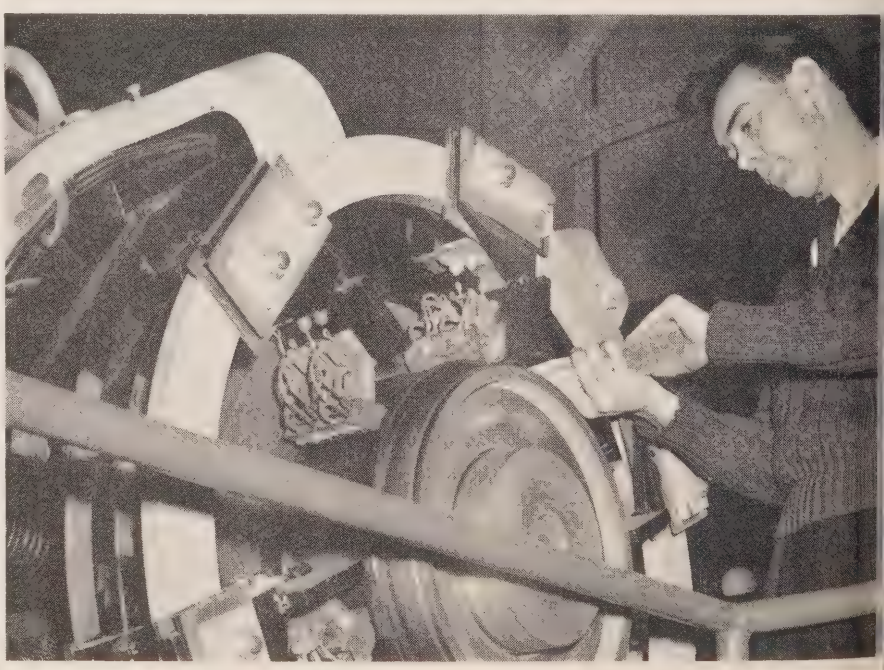
The question and answer plan of train-

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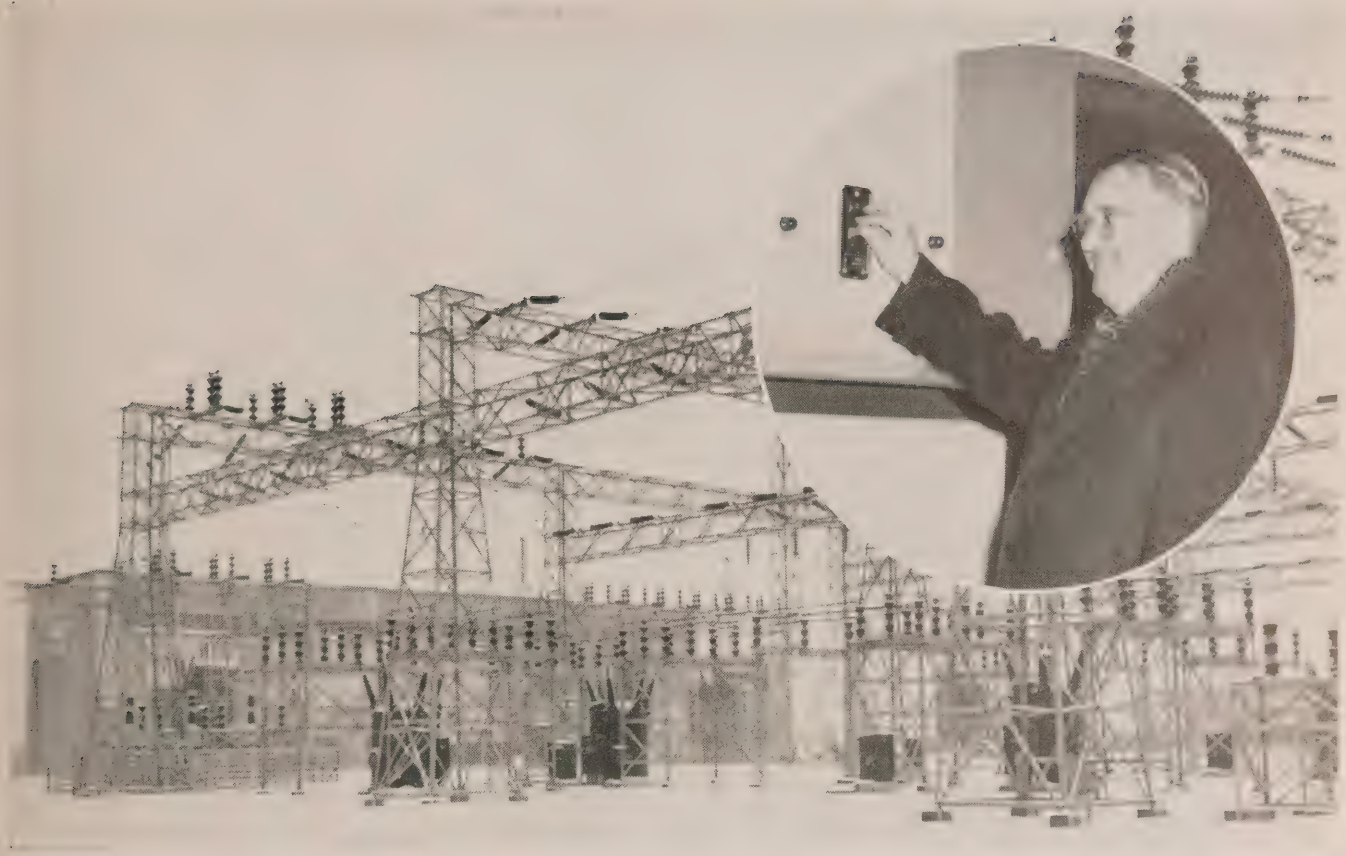
Good Housekeeping



"GOOD HOUSEKEEPING" is an early part of the training of the embryonic operator. Here, Allen Birkett cleans a turbine shaft at Queenston Generating Station. Cleanliness is a distinct feature of every Hydro generating and transformer station.



CLEANING COMMUTATORS on exciters of frequency changer is part of the daily routine of operators-in-training at Scarboro station. Ken Kehler is busy at the task.



HON. WELLAND S. Gemmell, Ontario Minister of Mines, officiated at Sudbury ceremony.

Another Step Forward

New Frequency Changer Station Placed In Service At Sudbury

ACCLAIMED as one of the most important power distribution points in Northern Ontario, the new Sudbury Frequency Changer and Transformer Station was officially placed in service on January 26.

Formal opening of the new station was marked by a brief but impressive ceremony with Hon. Welland S. Gemmell, Minister of Mines and Sudbury District M.P.P., officiating.

Attended by mining, municipal and provincial officials, as well as several representatives of the Commission, the event was also marked by the presence of a large group of Sudbury and district citizens as well as visitors from many outside points.

On the special dais erected for the purpose, Commission Chairman Robert H. Saunders was flanked by several Northern Ontario municipal and Hydro officials, including Mayor W. S. Beaton and R. H. Martindale, Secretary-Manager of the Hydro-Electric Commission in Sudbury, along with Mayor T. M. Palmer and Chairman George Deegan of the Hydro-Electric Commission at North Bay. Other guests on the speaker's platform were J. Leo Gauthier, M.P., Sudbury; R. L. Beattie, Vice-President and General Manager, International Nickel Company, and George F. Hutcheson, Huntsville, O.M.E.A. President. Representing the Commission were A. W. Manby, Assistant General Manager—Administration; Alec Skene, Sudbury, (for many years district power supervisor in this area), and H. R. Graham, North Bay, Manager of Hydro's Northeastern Region.

Conducting the ceremonies, Chairman Saunders pointed out that the new station was a significant manifestation of the Commission's confidence in the future of that section of the province.

Referring to the important role which the new Hydro installation was destined to play in the interchange of power between Northern and Southern Ontario, Mr. Saunders said:

"The building of this station and its opening today is evidence that Hydro is vitally interested in protecting your future power supply in common with other sections of the province."

In dealing with the power situation in Northeastern Ontario at that time, the Hydro Chairman asked for the co-operation of every consumer for the next three months.

"I can assure you that the power shortage will be over by then," he stated.

Congratulates Commission

Highlight of the ceremony was the speech by Mines Minister Gemmell who

Continued on page 9)

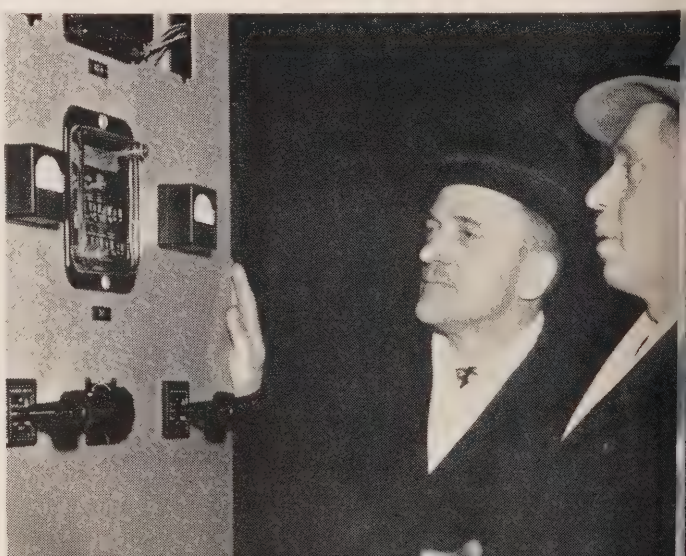


OFFICIAL OPENING of the new Sudbury Frequency Changer and Transformer Station was marked by a brief but impressive ceremony conducted by Chairman Robert H. Saunders. With him on the speaker's platform were several Northern Ontario municipal and Hydro officials, representatives of the Commission as well as other prominent guests. Acclaimed as one of the most important power distribution points in the province, the new station was recently completed at total cost of some $4,000,000.

MANIFESTING SPECIAL interest due to the fact that the plant is located in his municipality, Reeve Garnet Fielding, right, Garson Township, is shown chatting with Secretary-Manager R. H. Martindale, Sudbury Hydro-Electric Commission, and I. J. Simcox, official of International Nickel Company at nearby Copper Cliff, who attended official opening ceremonies held at the station.



AMONG THOSE attending the ceremony were these two Commission representatives pictured examining one of the panels at the big station. With A. B. Hayman, Consumer Service Engineer, Northeastern Region, is Chester Jones, Construction Superintendent during building of the plant and now engaged in a similar capacity at Scarborough F.C. & T.S. where an addition is underway.



ANOTHER STEP

(Continued from page 7)

expressed congratulations to the Commission on completion of the new station.

"I commend them for their foresight in building this station which will have an important role to play in distributing power for the expanding mining operations in this part of Ontario," he stated.

Continuing, he declared: "I deem it an honour and a privilege to officiate at this ceremony which means so much to the mines and other industries in this section of the province. With power, the future of Northern Ontario is assured."

As he stepped to the rear of the platform and pressed a button, lights came on behind a panel designated by the word "Hydro." Then the massive frequency changer unit began to hum. This humming gradually changed to a subdued roar, marked by lighting of the panel behind the word "Sudbury."

Short speeches were also given by Mayor Beaton, of Sudbury, and Mayor Palmer, of North Bay, Mr. Gauthier, as well as Mr. Hutcheson on behalf of the Ontario Municipal Electric Association. In bringing proceedings to a climax, Mr. Saunders paid tribute to members of the construction staff who had helped build the new station and who were present for the occasion. He stated that Hydro projects throughout Ontario were going ahead rapidly through the "wonderful co-operation" of those engaged in building activities at these developments.

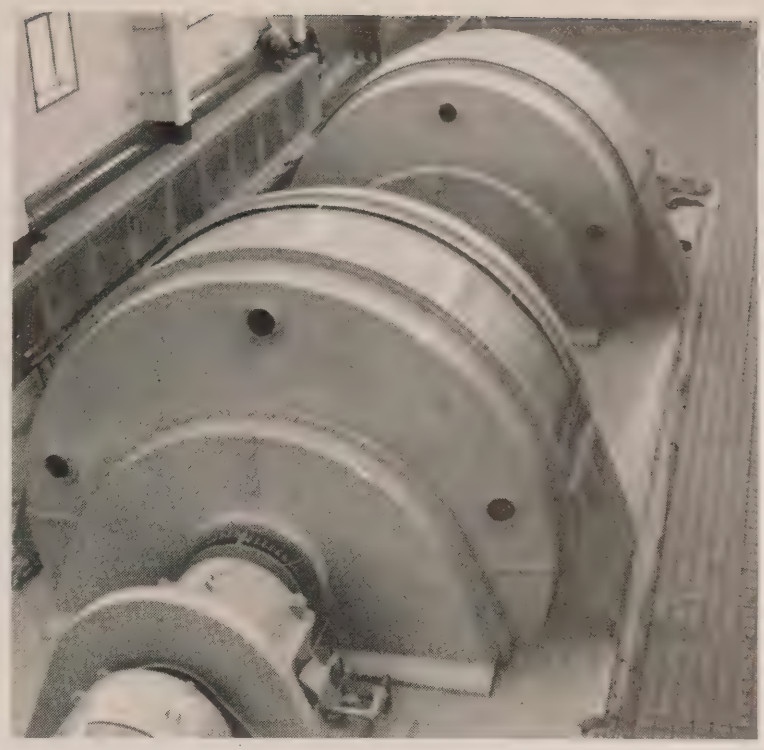
And so concluded one of the most significant ceremonies held in the Sudbury district in many years.

Strategic Location

Hailed as another important step in the further development of the resources of Northern Ontario, this new station was recently completed at a cost of some $3,000,000. Additional installations to improve the supply of power to the City of Sudbury and surrounding area cost approximately $1,000,000, bringing the total cost of the project up to $4,000,000. Hydro property at the site, four and three-quarter miles northeast of Sudbury, covers around 30 acres. During the peak of construction, accommodation, including dormitories, mess hall and a recreation hall, was provided for about 450 men.

Facilities of the new station, which is situated adjacent to the Sudbury-Falconbridge Highway, include a 25,000-kva frequency changer unit similar in design to the units installed at Scarborough and Westminster stations in Southern Ontario. This will enable the Commission to provide a power supply to both the 25- and

(Continued on page 31)



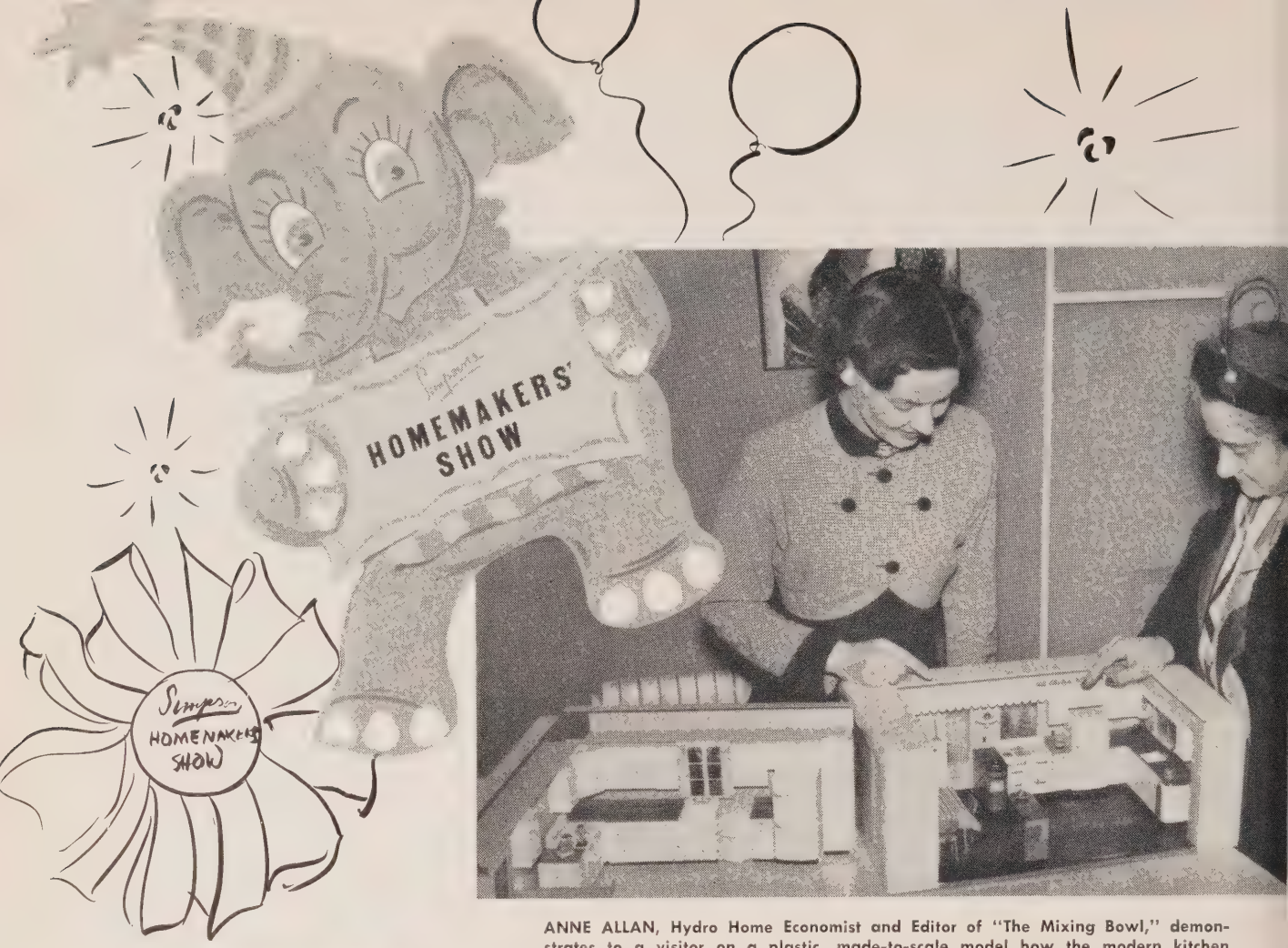
ENABLING THE Commission to provide a power supply to both the 25 and 60-cycle systems in Northeastern Ontario is this 25,000-kva Sudbury unit. Provision has been made for increasing plant's capacity when necessary.

CAUGHT BY the photographer at the conclusion of one of the most important ceremonies held in the Sudbury district in many years, this group includes R. D. Parker, International Nickel Company; J. M. Hambley, the Commission's Director of Operations; R. L. Beattie, Inco's Vice-President and General Manager and H. R. Graham, North Bay, Manager of Hydro's Northeastern Region.



THREE MEMBERS of the operating staff are shown in the control room of the new Sudbury station, located in the main building which also houses the large frequency changer unit. Transformer equipment at this plant is designed to improve the power supply to Sudbury and other points in this area where demands from industry and other consumers have shown steady increases.





ANNE ALLAN, Hydro Home Economist and Editor of "The Mixing Bowl," demonstrates to a visitor on a plastic, made-to-scale model how the modern kitchen could be planned to obtain the maximum benefit from "electrical servants."

by
Grace J. Carter
News Editor

Hydro Exhibit Attracts Many Interested Visitors To Colourful Toronto Event

TAKING on a carnival air, Simpson's Annual Homemakers' Show at Toronto, with its colourful booths, music, movies and entertainment, featured something of interest for every member of the family.

Included in the many interesting displays were the Hydro exhibit, a woodworking shop, eight breakfast rooms, mattress making, linoleum moulding, Florida lollipops made on the spot, and even a talking rug.

Visitors to the show, which started on January 12th and ran through to the 25th, expressed considerable interest in the Hydro exhibit featuring Anne Allan, Hydro Home Economist and Editor of "The Mixing Bowl," a weekly newspaper column giving timely recipes and household hints. There was also a large model of the Des Joachims Development; a panel showing how electricity is generated, transmitted and distributed to factories, farms and homes; and a section devoted to the frequency conversion program.

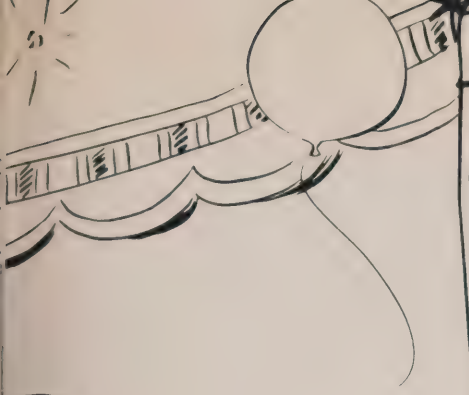
During the two-week show Miss Allan, with the aid of coloured slides, discussed homemaking problems as well as ways and means of improving the daily menus. She also used a plastic, made-to-scale model kitchen in demonstrating how the modern kitchen can be planned so that the homemaker may enjoy the maximum benefit from her "electrical servants."

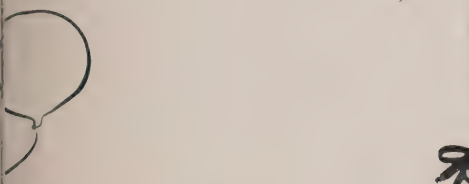
A scale model of the 380,000 kilowatt (480,000 hp) Des Joachims power development on the Ottawa River gave the visitors an opportunity to visualize this huge project whose first four units are scheduled to be placed in service in July of this year and the second four by the end of the year. Attendants answered questions not only on the Hydro construction program but on the tremendous frequency standardization program in the 25-cycle areas of Southern Ontario. An illuminated chart directed attention to approximate dates when 60-cycle conversion is scheduled to take place in the various towns and cities.

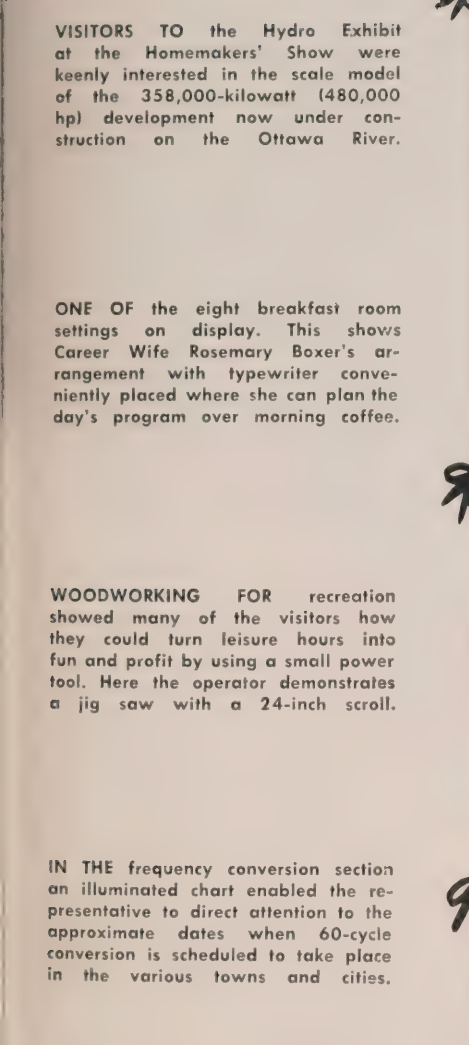
One of the highlights of the show was an interview between M. J. McHenry, Director of Hydro's Consumer Service Division, and Elaine Collett, Director of Moffat's Cooking School. In this interview Mr. McHenry pointed out that although the power situation looked a little brighter and that this would probably be the last winter during which power shortages would be experienced, it was still very necessary to conserve electricity.

In discussing the frequency conversion program, Mr. McHenry stressed the immensity of the undertaking and some of the problems with which the Commission had to contend. He pointed out that not only had industrial equipment to be converted, but also equipment and appliances in use in homes and restaurants and on farms. He said that to date about 8,000 consumers had had their equipment converted, and about 7,400 of these had been householders. He emphasized the importance of a responsible person being at home

(Continued on page 32)







VISITORS TO the Hydro Exhibit at the Homemakers' Show were keenly interested in the scale model of the 358,000-kilowatt (480,000 hp) development now under construction on the Ottawa River.





FORTY-YEAR pins were presented to two T.H.E.S. veterans, Walter Sellors and J. Bert Kitchen, who are seen after receiving the pins with Chairman Loftus Reid, left, and Vice Chairman Bert Merson, right. In rear is O. V. Anderson.

"BACKBONE OF SYSTEM"

Fifty-Eight Are Added To Roll Of Toronto Hydro's Quarter Century Club—Honoured At Dinner

HAILED as "the backbone of the System," 675 employees who have completed 25 years or more of service with the Toronto Hydro-Electric System, were honoured upon the occasion of the annual banquet of the Toronto Hydro Quarter Century Club at the Royal York Hotel last month. At this function 58 new members officially joined the club's ranks.

Those who have served for at least a quarter century now comprise almost half the total number of employees of the Toronto Hydro-Electric System. Indeed, the veterans number exactly 47 percent of the entire staff of 1,483 persons.

Mayor Hiram E. McCallum, Chairman Loftus H. Reid and Vice-Chairman Bert Merson eulogized the veterans and stressed the importance to the System of so many long-term employees. The combined service record of all 675 members of the club adds up to a grand total of more than 20,000 years of public service.

It was necessary to create a new, distinctive badge this year—a forty-year button, two Toronto Hydro employees having qualified for this long-term service badge. They are J. Bert Kitchen, founder of the Toronto Hydro Quarter Century Club, and Walter Sellors, both of whom joined the system in 1909. Presentation of the buttons to the new "40-year members" was one of the highlights of the evening.

Another feature of this year's annual banquet was the attendance of a large number of ladies who had "graduated" into the inner circle of the Quarter Century Club this year or within recent years. Also present were several retired Toronto Hydro employees, former active members of the club.

A spirit of gay camaraderie and a friendly, happy air of off-duty association permeated the dinner and the meeting that followed. President R. J. Johnson proved an able chairman, who kept the meeting going at a lively pace. The "big moment" for the 58 persons, who were received into membership in the club, followed after the brief addresses of Commissioners and top officials of the Toronto Hydro-Electric System.

Mayor McCallum emphasized the value of the long service and experience of so many T.H.E.S. employees to the Toronto Hydro and its consumers. He predicted that Toronto would grow into one of the greatest cities on this continent, and maintained that the Toronto Hydro members would have a big part to play during that expansion. The Mayor congratulated every member on their 25 years or more of service and wished them well.

Chairman Loftus Reid received a warm ovation when he arose to address the gathering briefly. He joined the Mayor in congratulating the Quarter Century Club members on their long service.

Vice-Chairman Bert Merson interspersed his remarks with witty observations and stories. He pointed out that Toronto Hydro had some problems on its doorstep all the time. "It is reassuring

(Continued on page 19)



BELOW—"GRUESOME Groaners from the Garage," as this group of singers is called, render the "Loftus Reid Shillelagh Song" as, inset, Vice-Chairman Bert Merson, left, presents gaily beribboned shillelagh to Irish-born T.H.E.S. Chairman Loftus H. Reid.



ABOVE—TORONTO'S Mayor, . E. McCallum, is serenaded y pretty accordionist, Nancy IcCaig. J. S. McGregor, left, eems to enjoy the music.



ABOVE — REMINISCIN about the early days Toronto Hydro, E. Ashworth, General Ma ager of T.H.E.S., is se in gay, festive moo



BELOW—PRESENTATION of button and certificate was highlight of evening for newest Quarter Century Club members. Secretary O. V. Anderson, (left) holds buttons which Vice-Chairman Bert Merson (back to camera) is seen presenting to G. Franklin Dean. Past President Sam Smyth and Murdo Finlayson are seen at right.

BELOW—HONORARY member, Irene Christian, one of the ladies attending function, adds b and charm to this group. Fron to right are officers of Toronto Quarter Century Club, George B Vice-President; Eric Armstrong, urer; R. J. Johnson, President, O. V. Anderson, the secr





JOINT BOARD

Engineering Group To Plan Maximum Development Of Winnipeg River Power Resources To Mutual Advantage Of Both Provinces

A JOINT engineering board, comprising three representatives from Manitoba and three from Ontario, will conduct investigations and develop plans for the maximum economic development of the power reseources of the Winnipeg River watershed to the mutual advantage of both provinces.

This announcement, made simultaneously by Premier Leslie M. Frost of Ontario and Premier Douglas Campbell of Manitoba, is the sequel to a series of exploratory conferences between government and engineering personnel of the two provinces.

Premier Campbell has announced that the Manitoba representatives on the board will be D. M. Stephens, Deputy Minister, Department of Mines and Natural Resources; B. B. Hogarth, Director of the Water Resources Branch of that Department; and W. D. Fallis, General Manager of the Manitoba Power Commission. The Ontario representatives, Premier Leslie Frost stated, will be F. V. Beatty, Surveyor-General of Ontario; Dr. Otto Holden, Assistant General Manager—Engineering, The Hydro-Electric Power Commission of Ontario; E. M. Wood, the Commission's Consulting Engineer on problems relating to System Planning and electro-technical matters.

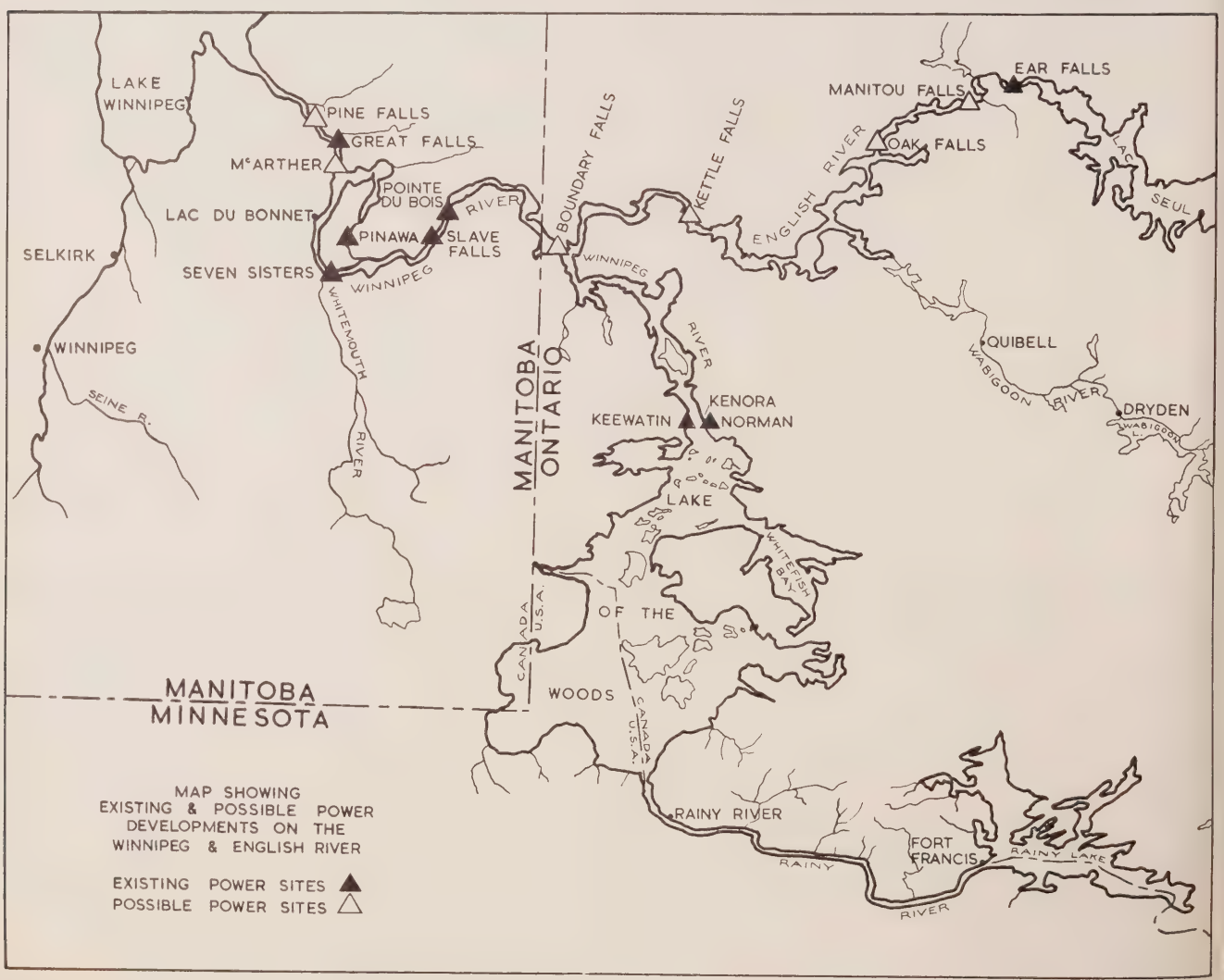
The board, known as the Winnipeg River Interprovincial Engineering Board, will get down to work in the immediate future and, upon completion of that work, report jointly to the Ontario and Manitoba governments.

At the same time, both Premiers Frost and Campbell stated, that in carrying out their assignment, the members of the joint board would maintain a close liaison with members of the Lake of the Woods Control Board which, it is pointed out, has certain statutory responsibilities and considerable data and experience in relation to hydrologic and other aspects of the Winnipeg River watershed.

"It would seem that the establishment of a close working relationship between the Lake of the Woods Control Board and the joint engineering board will be of vital importance to the working out of mutually advantageous arrangements with respect to this watershed," said Premier Campbell. This opinion was endorsed by Premier Frost of Ontario.

Over the past few months, a series of conferences, marked by a friendly spirit of close co-operation, have brought together many key government, engineering and commission personnel of both provinces, including Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario; Dr. Otto Holden, Assistant General Manager—Engineering, of that Commission; Premier Campbell of Manitoba; W. D. Fallis and T. L. Woodhall, General Manager and Chief Engineer respectively of the Manitoba Power Commission; J. W. Sanger, General Manager, City of Winnipeg Hydro-Electric System; E. V. Caton, Chief En-

(Continued on page 19)





All Aboard

Host Of Canadian Plants Kept Busy As Commission Presses Forward With Its Record Expansion Program

by
C. G. W. Macintosh
Hydro News

ALL Aboard! That familiar railroad call rings out virtually every week from railway sidings at Canadian manufacturing plants which are supplying tons of equipment and materials for Hydro's great expansion program.

Week after week, freight carloads of material are being speeded to various Hydro projects. Sometimes a single carload will leave an industrial siding or it may be almost a whole trainload of cars as manufacturers fill the thousands of orders placed by Hydro.

A typical example occurred on November 23 at a Hamilton supplier's factory. Ten freight cars, loaded with equipment, rolled out of the yards of the Hamilton plant for Des Joachims, Hydro's big development on the Ottawa River. The equipment consisted of the major components of the second 50,000 kva generator and the last components of the first generator. It represented another milestone toward the completion of Hydro's second largest power station.

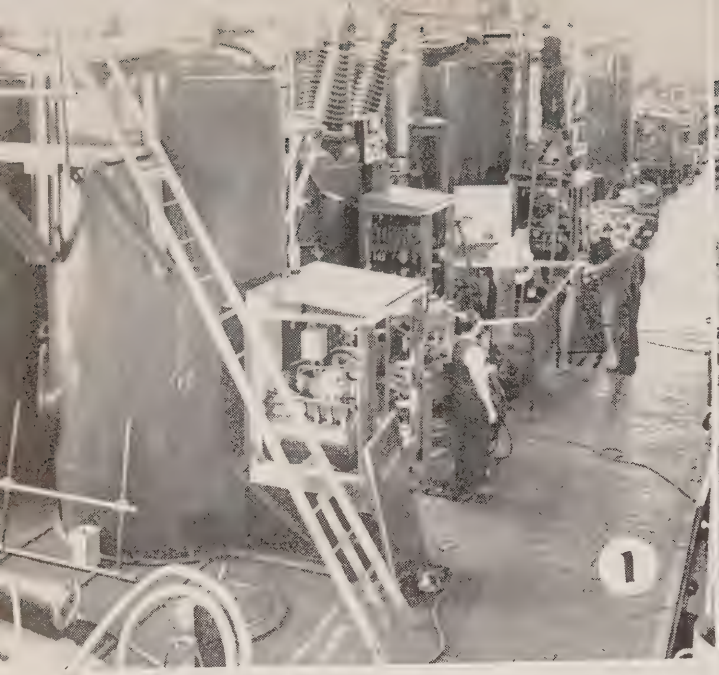
Weighing a total of 500,300 pounds, the equipment included an oil pot assembly, 52,700 pounds; four half section stator frames, 95,600 pounds; exciter (rotor, spacer, armature) 71,400 pounds; upper bracket arms (eight floor panels) 71,200 pounds; air casing assembly 64,600 pounds; a generator shaft and four crates of air casing parts 73,600 pounds, and a lower bracket which supports the generator and which weighs 71,200 pounds.

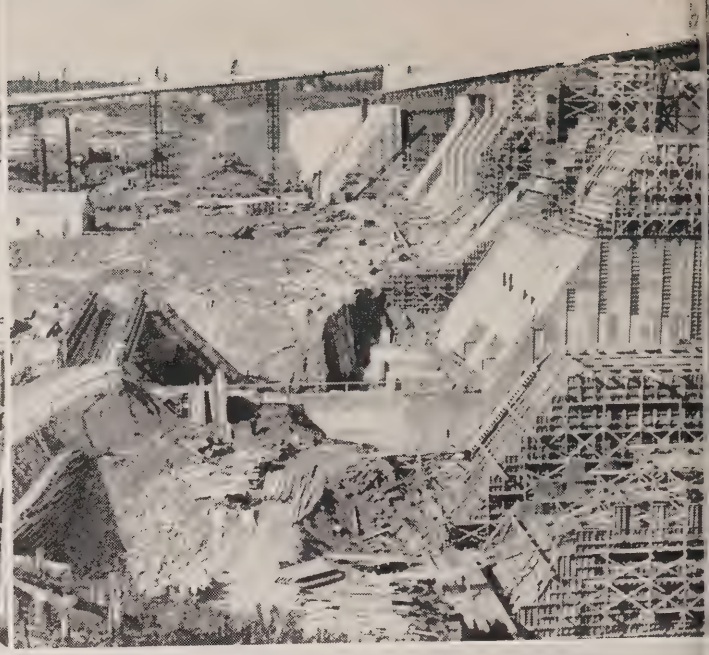
Orders placed by Hydro in carrying

(Continued on page 18)

DOWNSTREAM VIEW of big Des Joachims dam. Six penstocks are in place. Construction of powerhouse in foreground progresses.




1




3




5



1. OIL CIRCUIT breakers being assembled at C.G.E. Peterboro Works. Operation tests are being taken on nearest breaker.

2. RAPID PROGRESS is being made on 3,000-foot main dam at Pine Portage. In foreground is former bed of Nipigon River.

3. CONSTRUCTION OF plant building to house the Windsor Steam G.S. is being speeded. Site is near the Detroit River.

4. DRIVING PERMANENT concrete piles for substructure of Toronto Steam Generating Station, on the Toronto waterfront.

5. TYPICAL BIG, diesel-powered caterpillar tractor is ready to leave factory for shipment to a Hydro construction project.

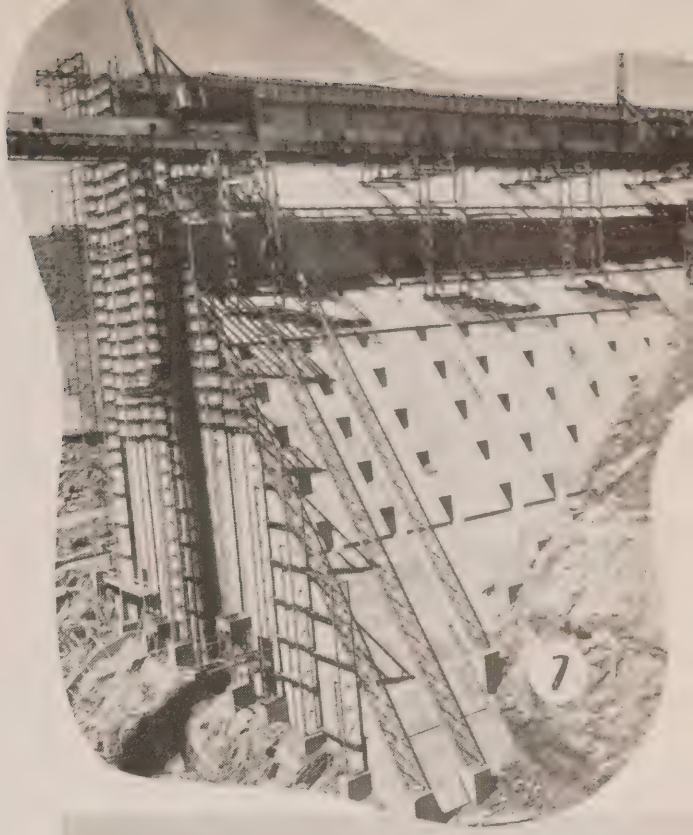
6. CONSTRUCTION OF main dam of Hydro's Chenaux development is well advanced. Site for powerhouse is in foreground.

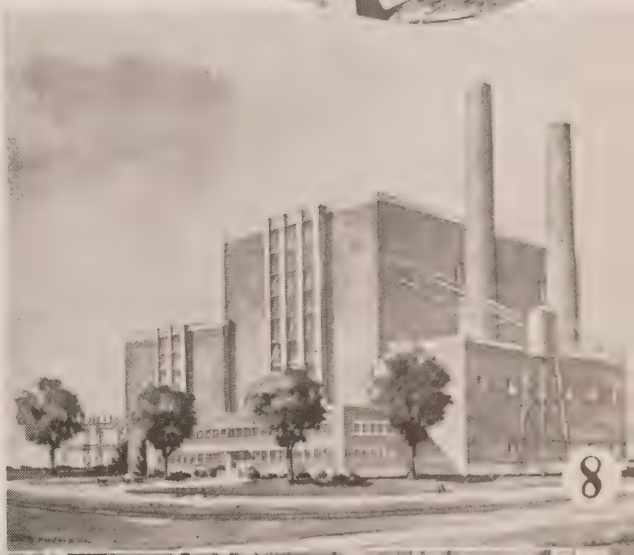
7. POWER DAM 235 feet high, 1,000 feet long is being constructed for Hydro's Tunnel development on Mississagi River.

8. ATTRACTIVE APPEARANCE of Toronto Steam Generating Station, scheduled for 1951, is indicated by architect's sketch.

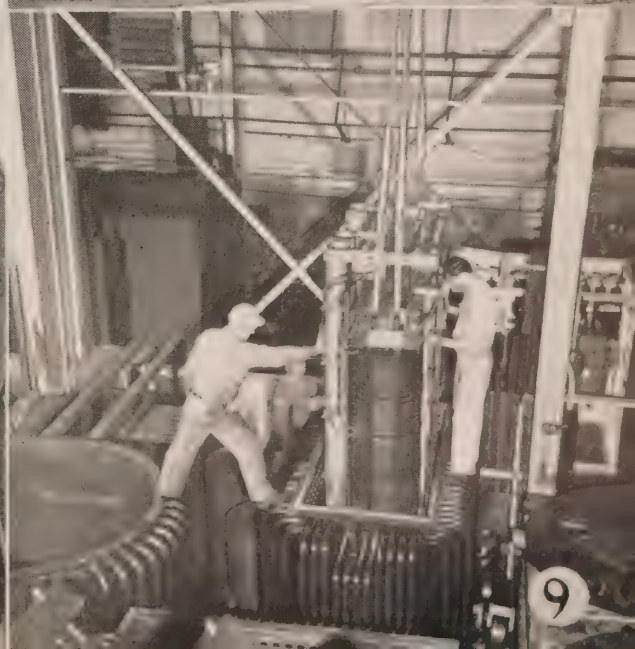
9. TANKING ONE of the 1,000-kva transformers being built for Hydro at the manufacturing plant of English Electric Co.

10. HYDRO AND Westinghouse officials examine oil pot assembly, part of large shipment bound for Des Joachims project.









ALL ABOARD

(Continued from page 15)

out its $580,000,000 construction program have made an all-important contribution to the overall economy of Ontario by helping maintain production and employment to a high level in many industries throughout the province.

At the same time, Hydro's $200,000,000 frequency conversion program, now proceeding in the 25-cycle areas of Southern Ontario, is giving a further impetus to industrial production.

For indeed, Hydro's policy of procuring material, equipment and supplies from Canadian firms wherever possible is an indication of the way in which the Commission encourages Canadian industry and helps to keep Canadian pay envelopes filled. Another of the Commission's policies, that of obtaining equipment and materials as close as possible to where they are to be used, encourages the establishment and maintenance of industries in some of the smaller centres of Ontario where Hydro projects are under way.

Purchase orders for materials for the various expansion and maintenance programs are placed by Hydro's Purchasing Department at the rate of over 300 per day. For example, during November, 1949, the number of orders placed with various firms was 6,742. This was a daily average of approximately 307 orders for the 22 working days. And just as impressive is the cost of these materials. It is estimated that approximately $1,500,000 is being spent weekly for equipment and supplies — money that is being distributed among various suppliers, which helps to keep their factories busy.

The Commission's expansion program, which is providing employment directly or indirectly for many thousands of people, calls for the addition of approximately 1,200,000 kilowatts or 1,600,000 horsepower of electrical energy to Hydro's resources. Of this total, 880,000 kilowatts (1,180,000 hp) will be made available from five new hydraulic generating stations and 320,000 kilowatts (428,000 hp) from steam-electric stations.

Hydro is pressing ahead with three hydraulic projects on the Ottawa River. The big Des Joachims development, scheduled for completion this year, will generate 358,000 kilowatts (480,000 hp). The Chenaux development, which will produce 120,000 kilowatts (160,000 hp), is expected to be in operation in 1951, and in 1952 LaCave is scheduled to commence delivery of 144,000 kilowatts (192,000 hp). In Northwestern Ontario, Hydro is building Tunnel, a spectacular canyon project on the Mississagi River near Thessalon. It is scheduled for completion this year and will deliver 42,000 kilowatts (56,500 hp). This year also, the Pine Portage development on the Nipigon River will be ready for initial delivery of 60,000 kilowatts (80,000 hp), and ultimately will produce 120,000 kilowatts (160,000 hp).

Two Steam Stations

The Commission also has under construction at the present time two steam-electric stations, one at Windsor, and the other at Toronto. The former is well advanced and is scheduled for initial delivery in 1951. It will provide 120,000 kilowatts (160,000 hp), of electrical energy. The Toronto steam-electric station, now under construction, will have a capacity of 200,000 kilowatts (268,000 hp).

Hydro's great expansion program is expected to usher in an era of still greater prosperity in Ontario. With an increased supply of electricity available it is anticipated that new industries will be attracted or that extensions will be made to existing industries.

Such, in brief, is the nature of Hydro's expansion program and the effect it is having and is expected to have on industry.

TWO NEW AREAS

FORMATION of two new rural operating areas has been completed by the Commission. D. E. Magee has been appointed Manager of the newly-constituted area with headquarters at Markdale while Area Manager of the new office at Dunnville is C. M. King. New and larger quarters are being provided for the Winchester Rural Operating area staff to handle an increased volume of business.

EMPLOYEES COMMENDED

Game Conservation Officer Roy Muma recently expressed his appreciation to three Hydro employees, Alex Campbell, Fred Thompson and Arthur Stapleton, who returned at eight p.m., after they had completed work for the day, to assist in the rescue of a large doe from the forebay at the Queenston-Chippawa Generating Station on the Niagara River.

Consumer Service Conference



CONSUMER SERVICE conference, first of its kind since the reorganization of the Commission's key personnel, was held recently at Hydro's Administration Building in Toronto. Object of the conference was to provide a closer understanding between field and office staff, and to clarify problems on both sides. In photo above, back row, left to right: I. K. Sitzer, Industrial Service Engineer; Guy Parker, Consumer Service Engineer, West Central Region; R. M. Durnford, Assistant to Director, Consumer Service Division; C. W. Richardson, Assistant Engineer, Rural Service Department; H. L. Hickey, Supervisor, Publication Advertising; John Baird, Assistant Statistician; N. E. MacPherson, Assistant Rural Service Engineer; E. W. McLeod, Chief Electrical Inspector; D. Flannery, Consumer Service Engineer, Niagara Region; A. Hayman, Consumer Service Engineer, Northeastern Region; E. R. Martyn, Consumer Service Engineer, Northwestern Region; J. W. Young, Consumer Service Engineer, Eastern Region; J. A. Blay, Manager of Promotion. Front row, left to right: P. T. Gaston, Assistant Chief Electrical Inspector; G. F. Drewry, Municipal Service Engineer; Adam Smith, Consumer Service Engineer, Western Region; M. J. McHenry, Director, Consumer Service Division; C. E. Crease, Consumer Service Engineer, Georgian Bay Region; D. N. Duffy, Statistician; F. C. Adsett, Consumer Service Engineer, East Central Region; E. G. Maddock, Consumer Service Engineer, Toronto Region; V. A. Beacock, Rural Service Engineer.

JOINT BOARD

(Continued from page 14)

gineer and Manager of Electric Utility, Winnipeg Electric Company, and others. The primary objective of these conferences was to pave the way for the implementing of plans which would enable Ontario and Manitoba, and consumers in both provinces to derive the maximum benefit from the development of power sites in the Winnipeg River watershed.

The joint engineering board, which has now been appointed, will investigate and report upon the probable future power requirements of these portions of Manitoba and Ontario which are within economic transmission distance of power sites on the Winnipeg River. They will seek to determine any instances where it would be mutually advantageous to have power developments in one province serve the power requirements of the other province. They will also study and report on transmission line facilities that would be involved in interchanges of power, bearing in mind the maximum economic use of such flows as may be available in the watershed from time to time and the most economic use of capital which may be invested in hydro electric facilities within the areas concerned.

At the conferences attended by government and engineering personnel of both provinces plans were discussed for the development of four new power sites which would make available a total of 245,000 horsepower. One of these sites is located at Boundary Falls on the Winnipeg River (150,000 hp.); Kettle Falls (30,000 hp.); Oak Falls (25,000 hp.); and Manitou Falls (40,000 hp.), all on the English River.

BACKBONE OF SYSTEM

(Continued from page 12)

to know," he declared, "that the System has some 700 persons with 25 years' experience or more who know the answers."

The speaker concluded his remarks with a warm tribute to the Toronto Hydro Chairman, and to the amusement of the gathering, he presented Mr. Reid with a gaily-wrapped and beribboned shillelagh.

This was the signal for the garage section of nine choristers, whom Mr. Merson had dubbed "the gruesome groaners from the garage," to go into action and serenade the Irish-born Chairman. They sang a specially-composed piece, "The Loftus Reid Shillelagh Song."

Final speaker was the dean of Toronto Hydro officials, the General Manager of the System, E. M. Ashworth. After reminiscing briefly about the early days of Toronto Hydro, he concluded his remarks by saying: "I wish you the best. I am glad that so many of you are still here, and I am equally glad that I am here to wish you well."

UNICEF

IT would be difficult to measure the value of one capsule of cod liver oil a day to an apple-cheeked Canadian boy or girl.

It is simple, however, to find its value to a tubercular child patient from Vienna who receives double rations from the United Nations Children's Emergency Fund and the government.

At UNICEF Ottawa headquarters, a report from the chief doctor at a hospital located at the edge of the Austrian Alps, showed the death rate among his patients had dropped from seven to one per cent in one year.

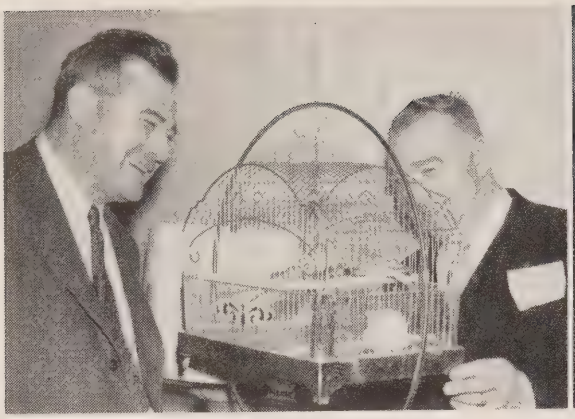
At UNICEF Ottawa headquarters this month, A. B. MacDonald, National Chairman, expressed the hope that every Canadian would find it possible to contribute the cost of several of the life-saving capsules in the appeal being conducted at the present time.

A $1 contribution will provide 10 needy children with a glass of milk a day for a week.

Lighting Damage At Windsor



WINDSOR UTILITIES Commission reported recently that damage to street lighting equipment had cost approximately $900 within two weeks. Expressing alarm over the increasing rate of vandalism—especially apparent in parks—the local commission announced that the cost of replacing broken light bulbs and other fixtures was in excess of $5,000 annually. In one area alone, four brackets, although 25 feet above the ground, were torn off their poles within 12 hours. Walter Belmore, a Windsor Commission employee is shown replacing light bulbs and globes damaged by vandals.



JUST A couple of love birds. James B. Gray, the Manager of North York Hydro, and James Wickiam, Superintendent of East York Hydro, look rather cagey, as they watch the antics of their fine feathered friends. The birds themselves obviously don't mind an audience.



DELEGATES WERE all smiles when this picture was taken at the King Edward Hotel during a convention recess. Included in the group are: A. O. Leslie, Scarboro; G. F. Pownall, Mimico; Colonel James Harris, Kingston; Ron Starr, Toronto Township; Charles Copland, Aurora; D. T. Black, Brampton; A. D. Norris, Mimico; Vern Hunt, H.E.P.C., W. E. Wright.

Great Public Partnership

People Of Ontario Have Best Electric Service In World, Loftus H. Reid Tells District No. 4 O.M.E.A.—A.O. Leslie Elected President

"PEOPLE may damn The Hydro-Electric Power Commissioners, but when all the inner and outer urgings in that respect are satisfied, honesty compels us to admit that the people of Ontario have the best electric service to be found anywhere in the world, and at the most reasonable rates," stated Loftus H. Reid, retiring President of District No. 4 O.M.E.A. and Chairman of the Toronto Hydro-Electric System.

Mr. Reid was addressing the delegates of the district at their annual convention held in the King Edward Hotel, Toronto, on January 20.

Continuing, Mr. Reid stated that "for this reason the Commissioners of The H.E.P.C. past and present, with their competent staffs are entitled to our thanks rather than our criticisms.

"Hydro is a great public partnership," he continued, "and this leads to a contemplation of the place and purpose of the Ontario Municipal Electric Association. I have heard it seriously asserted that it was the intention of Sir Adam Beck that the O.M.E.A. should 'run Hydro'—meaning The Hydro-Electric Power Commission of Ontario.

"With a layman's capacity I have read all the statutes governing Hydro. Twice I have read that interesting book on Sir Adam Beck and Ontario Hydro written by W. R. Plewman," declared the speaker, "and nowhere have I found any support for the theory of direct control and management by the O.M.E.A.

Made Worthwhile Contribution

"It cannot be denied that the O.M.E.A. made an eminently worthwhile contribution to Hydro in earlier days, even as it does now; but chiefly, I think, as a free association of those keenly interested and actively engaged in the promotion of Hydro as a public service."

Mr. Reid pointed out the O.M.E.A. provides a public forum in which municipal commissioners and committees may discuss problems common to all, and it furnishes a sympathetic and understand-

(Continued on page 31)



"NOW, LISTEN, Mel Gough, I've counted it three times and it still doesn't balance," says Douglas Moffitt as they go over the registration receipts for the Annual Meeting of District Number 4, O.M.E.A. However, $20.30 later the knotty problem was solved.



NEW OFFICERS of District Number 4, O.M.E.A. pose for their picture following their annual meeting. They are, back row, Alex Schaefer, Bolton; Loftus H. Reid, Toronto, Past President; W. P. Dale, Brampton; front row, Albert Jennings, East York; the new Chairman, A. O. Leslie; and G. F. Pownall of Mimico. G. Pattinson of Cooksville was absent at the time of the sitting.

WHO CAN TOP THIS?

J. L. Stonehouse Retires After Having Served 34 Years As Chairman Of Forest P.U.C.

FEW records stand long unchallenged and unshattered.

Last month, Hydro News carried a story about William Henderson, of the Waterloo Public Utilities Commission, who retired at the end of 1949 after 24 years of continuous service as chairman of the commission.

This was believed to have been a record for long service as chairman of a municipal commission. But, immediately following publication of the story, which included an invitation for readers to send reports of other municipal Hydro officials with similar records of service, information about a still more unique record was forthcoming.

From Adam W. Smith, Hydro's Consumer Service Engineer, Western Region, at London, came an account of a presentation to J. L. Stonehouse, who on December 29, 1949, retired as Chairman of the Forest Public Utilities Commission after 34 years of continuous service as chairman.

J. L. "Johnny" Stonehouse, 79 years young, was honoured by fellow commissioners and employees of the Forest Public Utilities at a surprise dinner at the Fraser Hotel. Attending the function were Mrs. Stonehouse, former mayors of Forest and their wives, fellow commissioners and their wives, employees of the commission and their wives, H.E.P.C. officials from London, and Mayor and Mrs. Ross McCahill.

Mr. Stonehouse was made an honorary life member of the Forest Public Utilities Commission, with power to attend all meetings and all conventions to which the commission might be invited. A handsomely engraved certificate to that effect was presented to him by Mayor McCahill. In addition, Mr. and Mrs. Stonehouse were presented with a handsome gift and a bouquet of flowers.

Appointed to the Forest P.U.C. in 1916, Mr. Stonehouse served 34 years, 10 months and nine days as head of the commission. During that time he watched consumption grow from 67 horsepower to approximately 900 horsepower.



LIFE MEMBERSHIP in Forest Public Utilities Commission is presented by Mayor Ross McCahill to J. L. Stonehouse, retiring after 34 years as Chairman of the Forest Commission.

Mr. Stonehouse recalled the early days of Forest's development of electric power when the town produced its own power from steam. Many problems often occurred because of water shortage difficulties. Forest joined the Hydro family of municipalities in March, 1917, and then commenced receiving its power from the Ontario Commission.

Acting as chairman for the dinner in honor of Mr. Stonehouse was Stanley Ellerker, Superintendent of the Forest Commission. Mr. Ellerker has been with the municipal commission for 31 years.

The chairman paid a glowing tribute

(Continued on page 33)



MAYORS OF Forest who have served on the Commission with Mr. Stonehouse were present to honour him on his retirement. They are (left to right) ex-Mayors G. Kernohan, F. Rumford, W. A. Dunlop, Mayor R. McCahill, the present incumbent, and ex-Mayor J. E. Barney.

A HAPPY EVENT

Verbal Bouquets Order Of Evening At Dinner Tendered City Council By Toronto Hydro

by
C. G. W. MacIntosh
Hydro News

MANY tributes to the character of the public service being rendered by the Mayor and members of Toronto City Council were expressed at a dinner given in their honour by the Toronto Electric Commissioners on February 2, at the King Edward Hotel. Representatives of 32 civic organizations, a cross section of the municipality, joined in paying sincere tributes to the men who direct the affairs of the Toronto civic government.

Possibly the finest tribute of the evening was paid to the "City Fathers" by Vice-Chairman Bert Merson who proposed the toast to the Mayor and City Council. Mr. Merson said that Toronto "has been well blessed in having capable, efficient city councils.

"Toronto," he said, "is proud of the fact that the city has never had a civic scandal—never a serious mistake by its city councils during the long history of the municipality. Perhaps the citizens take too much for granted, and do not realize what great sacrifices their elected representatives on council are making in their business, family and social life in carrying out their civic jobs."

The Vice-Chairman declared that no one mayor could take credit for the capable administration and the wonderful job that had been done over the years. It had been the result of all their collective efforts, he said.

Mr. Merson pointed out that the members of the Toronto Hydro-Electric System Commission marvelled at how the various mayors had been able to spare the time to deal with local Hydro problems, having such a multiplicity of other civic problems. But, he said, the mayors had been on the job when needed, and it was remarkable how quickly they had grasped the situation in a particular problem. They had always been ready to serve in the interests of the citizens, he concluded, and that was what constituted real public service.

Chairman Loftus Reid of the Toronto Hydro-Electric System was a capable and witty presiding officer for the banquet and the meeting. More than three hundred persons attended the function.

The Chairman introduced the only lady present, Reeve Anne Shipley of Teck Township, President of the Ontario Reeves and Mayors Association. She paid a fine tribute to Mayor Hiram E. McCallum and members of his council and then spoke briefly about provincial Hydro matters.

"We have had all kinds of problems during the past two years because of Hydro shortages," said Reeve Shipley, "but it is gratifying that the Ontario Hydro Commission has not left it up to us, the municipal councils and local commissions, to bear the whole load of these problems. Chairman Robert Saunders and other officials of Hydro would come directly to us to talk over, and help us deal with, and solve our problems."

Dealing with the same theme, George Hutcheson, of Huntsville, President of the O.M.E.A., who was invited to address the gathering, praised the co-operation that had been received from the various local commissions during the power shortage periods in the past. If it hadn't been for that co-operation, he said, they would have had a harder time.

Colonel the Hon. Arthur "Tiger" Welsh, who represented the Premier of Ontario, and the Ontario government, also joined in praising local Hydro commissioners and Ontario Hydro officials. Col. Welsh declared that those who had been associated with Hydro affairs were important links in the progress that had been made in the province. "I think," he said, "that the people who have been linked with this great enterprise have been men of vision and good Canadians."

Chairman Reid in introducing Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario, observed that the relationship between the Ontario Hydro and the various municipal Hydro groups had never been better in the long history of Hydro than it was today.

Mr. Saunders, in his opening remarks, called on the audience "to rise and drink a toast to the greatest commodity in the Province of Ontario today" and then, solemnly, he pronounced: "God bless water."

Turning to civic affairs, the Hydro Chairman stated that Mayor McCallum



General view of dinner at King Edward Hotel.



"FOR HE'S a jolly good fellow" sings Reeve Anne Shipley, of Teck Township, President of the Ontario Reeves and Mayors Association, at civic dinner honouring Mayor H. E. McCallum and Toronto City Council. Toronto Hydro Chairman Loftus Reid and Vice-Chairman Bert Merson, hosts, agree with the lady reeve.

has been one of the greatest mayors that Toronto had ever had. He was doing a wonderful job for the city, Mr. Saunders said, and regardless of whether people agreed or disagreed with him, Mayor McCallum was sincere and would give his opinions.

Chairman Saunders said that he was proud to "belong to that noble body of ex-mayors of Toronto who have done such a great job for the city." He called on the ex-mayors present to stand and introduced them as Col. Reginald Geary; Thomas L. Church, M.P.; William Robbins and Ralph C. Day.

Following the toast to the Mayor and City Council, Mayor McCallum spoke briefly. He paid tribute to Reeve Anne Shipley, the only woman reeve in Ontario, to Col. Welsh, and to his predecessor in the mayor's office, Robert H. Saunders. Referring to Mr. Saunders as "one of the most capable mayors in Toronto's history," Mayor McCallum said that Mr. Saunders was doing an equally efficient job now for the Ontario Hydro.

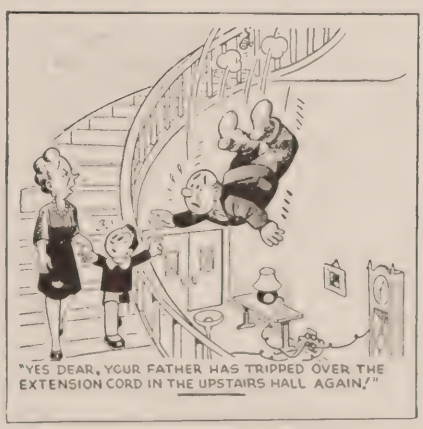
"Unfortunately," said Mayor McCallum, "one of the weakest spots with our governments and with most public service commissions is the public relations job. The only time that we used to hear much about Hydro was when something went wrong. Mr. Saunders took over the chairmanship of Hydro at a critical time when there were serious shortages of power. But he has done an excellent job of letting the people know the facts. I hope that Hydro will continue to do a good job of public relations so that the people will know what Hydro really is doing. It would be a good thing if all government and all public service bodies did the same thing."

The mayor voiced the appreciation of the citizens concerning the "fine work that the two appointed commissioners of the Toronto Hydro-Electric System are doing."

He concluded by introducing the various members of the 1950 council present and observed that the citizens should feel fortunate that over the years they had had good government. The mayor said that this was possible because of the many public spirited citizens in Toronto.

Other speakers included Mayor Trace Manes of Leaside; Controller Leslie Saunders; E. M. Ashworth, General Manager of the T.H.E.S., and Ex-Mayor Thomas L. Church, K.C., M.P., who has since passed away.

Seated at the head table were several distinguished persons: George Hutcheson, President of the O.M.E.A.; R. L. Hearn, General Manager and Chief Engineer, H.E.P.C.; Magistrate Robert Browne; E. M. Ashworth, General Manager of T.H.E.S.; Controller Leslie Saunders; the Hon. Arthur Welsh; Rev. Col. Bruce Hunter; R. H. Saunders; John McKee, President of the Royal Winter Fair; Vice-Chairman Bert Merson of the T.H.E.S.; Mayor Trace Manes of Leaside; George Lawrence; Chairman MacBrien of T.T.C.; A. W. Manby, Assistant General Manager—Administration, H.E.P.C.; Albert Jennings, Chairman of East York Hydro and the late Thomas L. Church, K.C., M.P.



Classified Ads

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The Salvage Department,
Hydro-Electric Power Commission of Ont.,
1379 Bloor Street, West, Toronto.
Phone: Bell—KEnwood 9275.
Automatic—2134

Her car stalled at the corner. The lights changed colors, red, yellow, green, several times while she tried to start. Finally a cop walked over, put his foot on the running board, and said:

"What's the matter, lady? Ain't we got any colors you like?"



"YOU BET I'm going to talk about the mighty fine job you fellows are doing," Dr. O. M. Solandt, O.B.E., Chairman of Canadian Defence Research Board, and guest speaker at the annual luncheon of the Professional Engineers of Ontario, tells 1st Vice-President W. H. M. Laughlin and Past President W. J. W. Reid.

Role of Engineer in Modern World Outlined by Dr. O. M. Solandt, O.B.E.

★

Solandt was of the opinion that the engineer was fast becoming the very backbone of both industry and the Armed Forces. In both, success or failure depended upon the mastery of complex machines by highly organized groups of specialized workers. The engineer was the man who could create, construct and repair the machines.

"The professional engineer," pronounced the speaker, "should have such breadth of training and experience and such imagination and initiative that he will more and more assume the leadership of vast enterprises in both industry and the Armed Forces. The day when industry was dominated by financial experts and the Armed Forces by brave but simple soldiers is passing. Bravery and financial knowledge are still necessary, but professional competence is also becoming essential."

There was nothing very new, Dr. Solandt said, about the spread of engineers into all parts of the Armed Forces. In the Army the Engineers had introduced and for some time operated telephones, radio and even aircraft. They were the pioneers of chemical warfare and had introduced many other novel weapons. The growing separation between strictly military engineering and other engineering jobs in the Army had resulted in the formation of the Royal Canadian Corps of Signals after World War I and of the Royal Canadian Electrical and Mechanical Engineers after World War II. In the Navy the engineer had appeared as an adjunct to the steam engine.

"I feel certain," said Dr. Solandt, amid laughter, "that he was at first as welcome as a tank mechanic in a cavalry regiment."

In the Air Force, the speaker continued, the engineer had always had a prominent place because he was essential to the operation of aircraft. Today, in all three services, the increasing complexity of equipment had continually enhanced the importance of the engineer in the design, maintenance and operation fields.

A Creator And Builder

Dr. Solandt pointed out that engineering had been defined as "the art of the

"O FAREWELL HONEST SOLDIER"

ROBOTS TAKE OVER

by
Harry M. Blake
Hydro News

SINCE Crecy, Poitiers and Agincourt, when English archers with their yard-long, "goose-feather" shafts, mowed down the opposing cavalry, down through the days of pike and musket and into the era of the repeating rifle and the machine-gun, infantry has been called the Queen of Battle. Even in the last world war, when the cavalryman was displaced by the reconnaissance plane and the tank, the foot soldier remained, sweating, swearing and swatting it out and driving home the final thrust for victory:—

"Death had he seen by sudden blow,
By wasting plague, by torture slow,
By mine or breach, by steel or ball,
Knew all his shapes and scorned them all."

If the peace we should be praying for is broken, however, and there should be another global conflict, the infantryman, as such, is unlikely to be the decisive factor. His time-honoured place will probably be taken by robot mechanical devices equipped with the equivalent of every human sense organ except smell.

This was the picture drawn by Dr. O. M. Solandt, O.B.E., Chairman of the Canadian Defence Research Board, in addressing the Association of Professional Engineers of the Province of Ontario at their recent annual luncheon meeting at the Royal York Hotel, Toronto. Dr. Solandt was introduced by Professor G. R. Lord.

Importance of Engineer

While inferring that, in spite of his splendid traditions, the importance of the old type of infantryman in any future world war would have to be greatly discounted, in view of the tremendous advances made in mechanization, Dr. Solandt believed that the opportunities and consequently the prestige of the engineer would be immeasurably increased. Pointing out that it was the job of the engineer to make the new ideas and the new knowledge supplied by the research scientist applicable to practical problems, Dr.



PRESIDENT-ELECT E. V. Buchanan of the Association of Professional Engineers of Ontario notes the number of Hydro men in the luncheon attendance roll Past-President Reid is holding.



CHECKING THE list of top-table guests are (left to right) J. R. Montague, Director of Engineering (H.E.P.C.), and D. G. Huber, G. Ross Lord and V. G. Smith (all of the University of Toronto).

economic application of science to social purposes" and also as "the art of directing men and controlling the forces and materials of nature for the benefit of the human race." Both these definitions implied that the engineer was primarily a builder, and it was important to emphasize this fact.

In the past, the speaker averred, there had been, in Canada, too great a gap between fundamental research in the Universities and the work of engineers even in the same universities. This was a perfectly natural and healthy stage in the growth of the country and it was now nearly over. Scientific research in Canada had grown up in the universities as part of the world-wide search for new knowledge. At the same time, the engineering profession had been fully occupied in taking established techniques from the older countries and applying them to meet the pressing practical needs of a pioneer country. There had been so many roads, railways, bridges and buildings to be constructed, factories to be planned and operated and goods to be produced that engineers just had not felt the urge or found the time to seek new ways of applying the latest discoveries of science. Now we were reaching the stage when we were a maturing, industrialized nation and we must be sure that scientific research and engineering linked up effectively if we were to maintain a favoured place in our highly technical world. This linking of scientific research with engineering would require some reorientation of popular views on the role of the engineer.

"Your Association," said Dr. Solandt, "is already doing much to bring this about. The old idea of the engineer as an operator must be abandoned. Even the idea of the engineer as a builder will not suffice for the future. He must regard himself as a creator, one who takes new ideas and applies them in new ways for the benefit of mankind. This will, of course, demand some change in his education — more basic science and mathematics — less early technical specialization. These changes are already well underway and the need for them is now widely recognized.

Professional Responsibility

"This changed view of the place of the engineer in the community must go hand in hand with the changed view of his responsibility to the community that is the very foundation of your Association. The engineer that I have described is a professional man, whether he does his

A DISCUSSION "in camera." In this group of professional engineers (left to right) are F. H. Chandler, D. Forgan, J. W. Walker, R. W. Chandler, Alexander Mitchell and R. H. Self.



AMATEUR PHOTOGRAPHS by professional engineers were on exhibition at the annual meeting. J. W. Walker is showing some of his work to S. S. Vozoris and Frank M. MacDonald.



creative work in a university, in industry, or in the Armed Forces. To qualify as a professional man, a person must be possessed of some special knowledge or ability that is of value to the community and he must use these powers primarily for the welfare of others and only secondarily for his own advancement. As a profession, engineering is relatively new, but you have already made great progress toward establishing a tradition of service to the community. It is interesting to note that this idea of the professional responsibility of specially qualified individuals is only now coming to be recognized in many of the basic sciences. Physicists in particular have been brought face to face with the problem in an alarming way by the discovery of the atomic bomb.

Challenge Of Atomic Age

"We are just on the threshold of the age of atomic power. I think that it will be many years before atomic power will be widely used in industry, but it will be used much sooner for military applications such as the propulsion of warships or submarines. The use of atomic energy for power presents engineering problems that will be a challenge to the whole profession for several generations."

After referring to the progress that had been made in the mechanism of Canada's Armed Forces, Dr. Solandt stressed the dominant part the professional engineers were playing by helping to maintain Canada's military strength and by increasing the skill and productivity of her industry. The whole march of world events made it clear that the scientists and engineers must play a part of increasing importance in social and political affairs if mankind were to find happiness rather than disaster in the atomic age. The very fact that the Association, which was concerned with the professional, rather than the technical responsibilities of the engineer, was so strong and active, showed that the engineers of Ontario and of Canada were rising to meet this challenge.

"Hydro" Men Appointed

The President of the Association for the current year is E. V. Buchanan, General Manager of the Public Utilities Commission, London. J. R. Montague, Director of Engineering, The Hydro-Electric Power Commission of Ontario, was elected to the Council in the Mechanical and Industrial Branch. Appointments by Council included a number of Hydro engineers. E. V. Buchanan is Chairman of the Executive Committee; J. R. Montague (H.E.P.C.) is a member of the Legislation Committee; M. J. McHenry (H.E.P.C.) and R. H. Self (H.E.P.C.) are on the Publicity Committee; H. J. Chambers (Toronto Hydro) serves on the Legislation Committee, the Board of Examiners and the Liaison Committee with Federation; W. F. Sutherland (Toronto Hydro) is on the committee concerned with the Remuneration of Salaried Engineers; J. Clark Keith, General Manager of the Windsor Utilities Commission, is Chairman of the Professional Engineers Medal Committee.

Council For 1950

The Council for 1950 follows:

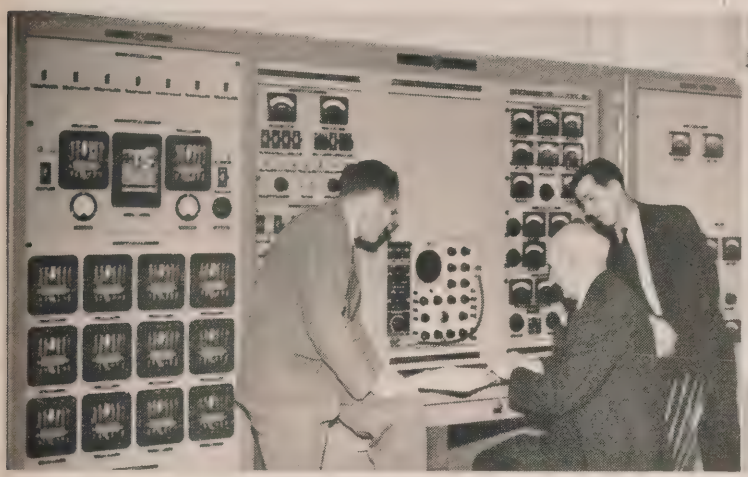
President, E. V. Buchanan; Past President, W. J. W. Reid; 1st Vice-President, W. H. M. Laughlin; 2nd Vice-President, O. D. Johnson; Civil Branch, H. E. Barnett, J. L. Lang, W. L. Sagar; Chemical and Metallurgical Branch, J. E. Buchan, C. K. Fraser, R. M. P. Hamilton; Electrical Branch, H. J. Chambers, W. J. Gilson, O. W. Titus; Mechanical and Industrial Branch, O. W. Ellis, G. R. Lord, J. R. Montague; Mining Branch, J. W. Baker, A. E. Cave, M. W. Hotchkin. Messrs. Lang, Hamilton, Titus, Lord and Hotchkin were appointed by the Lieutenant-Governor in Council. The Director of the Association is "Tom" Medland, and the permanent Secretary-Treasurer and Registrar is J. M. Muir.

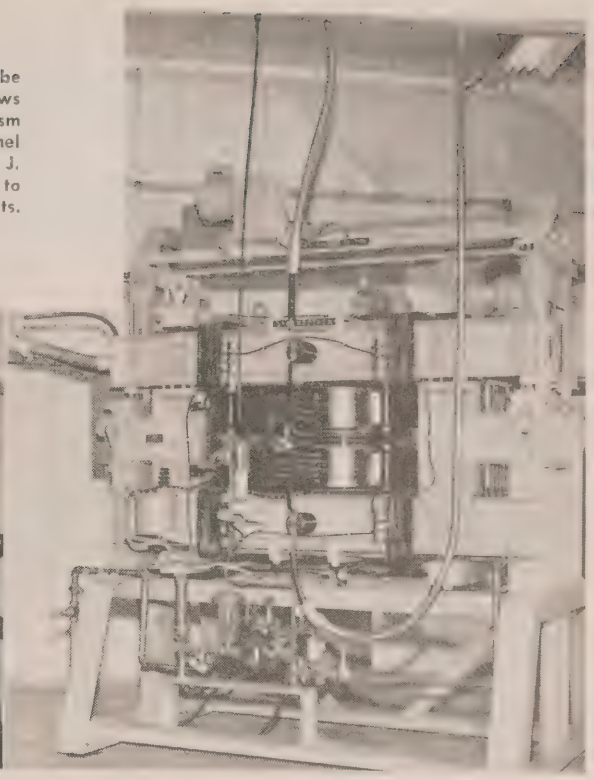
Noteworthy Service Records At Chatham



R. S. (SMOKY) REYNOLDS, the popular and widely-known Manager of Chatham Hydro-Electric System, said some mighty nice things about the staff at Chatham Hydro when speaking to us recently. Before leaving, he asked if we were interested in having a picture of 25-year-service employees. Our answer was that we are more than interested in such pictures. People who have long records of faithful service with Hydro are not only top news so far as we are concerned but they command our respect and esteem and, we are sure, the interest and admiration of all members of the great Hydro family in Ontario. And so here is a picture for which we are deeply indebted to "Smoky." Turning our attention to the back row, and reading from left to right, we find E. Tugwell of the General Maintenance staff, one of the pioneers of Chatham Hydro—a gentleman with 36 years of service to his credit. Next is G. Cook who has specialized in meter reading. His record—30 years with Hydro and, before that, he was with the old Chatham Gas Company. F. A. Clark was also with the Gas Company, has served Chatham Hydro for 31 years and is Station Superintendent. Moving along we come to R. R. Wood, Treasurer and Office Accountant, whose service record is 30 years. The muscular gentleman is W. Moore, Line Foreman, who has been with Chatham Hydro for 28 years. J. Jones, at the end of the back row, has served for 31 years and is on the General Maintenance staff. The four in the front row are J. Caldwell, Line Superintendent, 30 years' service; W. E. Killby, Chief Billing Clerk, 31 years; F. McKishnie, Station Operator, 30 years; and H. Burke, General Maintenance, 28 years. Take a bow, gentlemen!

TEN-TON ELECTROMAGNET, right, is main feature of synchrotron to be used for nuclear Research at Queen's University, Kingston. Photo shows transformer, cooling ducts and other associated features. Starting mechanism and capacitor bank are located on opposite side of room. Control panel is housed in separate room to ensure operator's safety. Below, Prof. J. A. Gray of Queen's Department of Physics (seated) explains a point to colleagues H. M. Cave and D. T. Roberts. They will conduct the experiments.



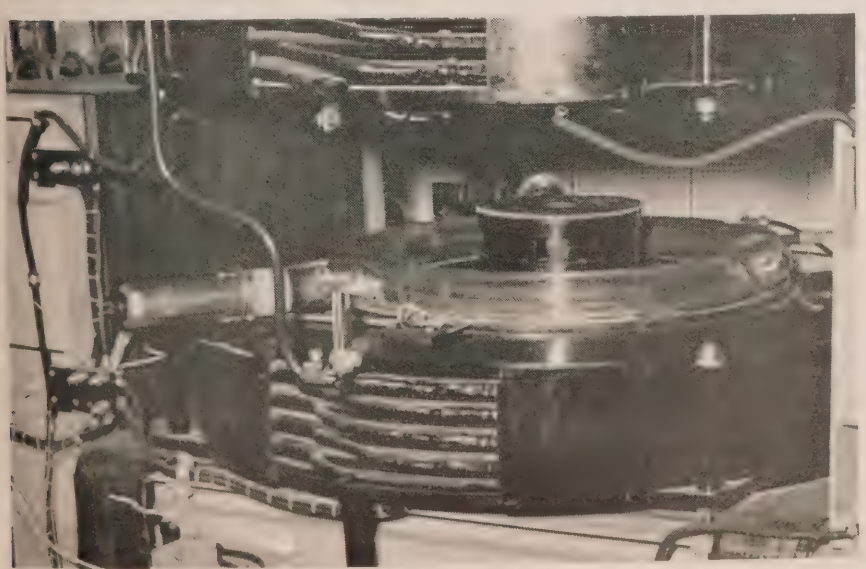


Synchrotron

Ten-Ton, Alternating-Current Electro-Magnet Is Feature Of Research Apparatus At Queen's University —Particularly Valuable In Nuclear Research

by

Edith B. Kent
Hydro News



WORKING PORTION of magnet is shown in closeup. Electrons are shot off X-ray gun, left, into glass tube, where their speed is accelerated to almost the speed of light. Striking tungsten target, they produce X-rays of extremely high voltage.

MAGICIANS of old might well stand amazed at a machine shortly to be put to use at Queen's University, Kingston. First of its kind in Canada, this machine, called a synchrotron, is said to be capable of changing lead into gold—an alchemist's dream.

This is not the purpose for which the synchrotron will be used, however. In the main, it is a valuable research tool with which to study the properties and effects of X-rays and electrons with energies of up to 70 million volts.

Designed and built at the laboratory of the General Electric Company in Schenectady, N.Y., the synchrotron is one of a number of nuclear research devices installed in Canadian universities. Other machines are located at McGill University in Montreal, the University of Saskatchewan in Regina, and the University of British Columbia in Vancouver. Findings of the various research groups will be pooled at the National Research Council in Ottawa, and it is expected that important discoveries will be made in the fields of X-rays and nuclear physics. The trend now is to adopt this type of machine for cancer research.

Main feature of the apparatus is a ten-ton, alternating-current electro-magnet which accelerates electrons released in a circular glass tube, or "donut," located between the poles of the magnet.

Continued on page 30

This and That

by

The Editor

RECENTLY, DURING lunch hour periods we have observed one or two Hydro folk deep in thought as they fingered through colourful-looking booklets. In each case, as we approached, these booklets were quickly removed from sight. Our curiosity was aroused but we realized that Emily Post might not approve our asking "What the dickens are you trying to hide from us?" To be quite frank, we were a little disturbed even if it were none of our business what a colleague reads during his lunch hour.

One day, however, the mystery was solved by an act of providence. This time we moved up quickly on our quarry and in his haste to cover his booklet he dropped it on the floor. With a cavalier gesture, we quickly retrieved the object of our curiosity. Then we were rather ashamed of having misjudged our colleague. It wasn't a book on "How to Play Canasta and still be Sociable." It was a seed catalogue! The owner grinned. "This literature seems to grow on you about this time of the year," he said.

We nodded understandingly. "It would be wonderful," we ventured, "if we could produce the kind of blooms they show in these colour photographs."

Realizing he was talking to a kindred spirit, he quickly looked round the room and then in a low voice said, "Look at that lawn." As we looked at an out-of-this-world colour reproduction, we could almost feel ourself strolling over a vast expanse of green velvet.

"Just how do guys like us go about getting a lawn like that?" he asked.

We pondered for a minute. "It's really a matter of getting down to earth and working hard," we replied. "You've got to give it lots of thought, time and effort. If you have some kind neighbours, they might give you a hand, provided you'll do the same for them."

"Say," he exclaimed, "you've got something there. I have one neighbour who has a few horses and cows."

"Good," we replied, "these animals also have a little of what it takes to make a good lawn."

At this point, it was time to adjourn the interesting grass roots discussion on lawns and resume work.

THE FACT that a few seed catalogues are already being studied is an indication that Spring is not too far away. Indeed, we read a story recently, recording the observations of an Ontario farmer who told of seeing four strange insects which, he said, were a little larger than mosquitoes and appeared to resemble certain insects which are usually found in the tropical areas. It was suggested that these particular insects had been assigned to survey conditions in Canada and report back to the Insect G.H.Q. in the Tropics!

There is something thrilling and exciting about this business of looking for the first signs of Spring. It starts every February. In this connection, many of our readers will recall a very widely-read feature which was published on the front page of the old Globe back in the twenties and thirties. It was known as The Southeast Corner and was fathered and conducted by our late friend and colleague of newspaper days—Andy Clarke, whose voice as "The Mayor of Little Places" (on Neighbourly News) was known to thousands of radio fans throughout Ontario. We remember Andy in his Globe days when he was News Editor. He was a shirt-sleeve worker and favoured striped shirts. He would walk out of his office, reach into his right hip trouser pocket, pull out his pipe, fill it from his pouch and stand looking down the news room with a smile on his face and his eyes dancing through his spectacles. "Well, Bill," he would drawl, "I got a dandy for the Southeast. The Globe robin has been sighted at last." Then he would wheel round, lighting his pipe and stride back into his room, chuckling to himself.



"This where I get expelled?"

The Globe robin was famous in the days of Andy Clarke. It was the true harbinger of Spring and the readers would faithfully report day by day the appearance of the Globe robin in backyards and elsewhere. Wonder where it is now?

So far as we are concerned, Spring doesn't officially arrive until a certain crocus appears in a certain spot in a certain garden some ten miles to the west of Toronto. For the past eleven years we have waited for that crocus before according to Spring any official status. It started during the last week of March, 1939, when a gentleman by the name of Robert C. Harwood told us that Spring had arrived. (We resided very near Robert at that time). We looked out the window, saw the snow on the ground and started to make a few facetious observations. "Well, well," we derided, "and probably the first crocus has appeared in your garden and there may even be buds on your rose bushes." We regretted these words shortly after we had uttered them for before we realized what was happening we were rushed out of our house and over to the Harwood estate which covers a considerable area. And there, close to his Spanish type domicile, we saw a crocus which had forced its way through the snow!

We suffered our embarrassment as gracefully as possible and agreed on the spot that from that time forward we had to accept Harwood—or at least a Harwood crocus—as the official harbinger of Spring. As a result, there is now an official annual ceremony. As soon as Harwood gets the nod from the crocus he phones us and we proceed toute de suite to the scene of the vernal renaissance. That reminds us, we had a communique just the other day advising us to stand by for an early call this year.

And so, it looks like an early Spring and an early return to the great outdoors and the good earth. The lads with the seed catalogues may be have something in more ways than one. (Around July, it might be interesting to take a look at that chappie's lawn!)

CONVENTION PROGRAMS

OVER a thousand delegates are expected to register at the forthcoming annual conventions of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities, at the Royal York Hotel in Toronto on February 27, 28, and March 1. Said to be one of the oldest conventions in Canada, this marks the 41st joint meeting for these Associations.

The convention programs are as follows:

O.M.E.A. PROGRAM

MONDAY, FEBRUARY 27

Registration (Convention floor) 10 a.m. to 6 p.m.

Registration (Roof Garden) 9 p.m. to 11.30 p.m.

MORNING:

10:00—(Private Dining Room No. 8) O.M.E.A. Executive Committee meeting.

AFTERNOON:

12:30—(Private Dining Room No. 7) O.M.E.A. Executive Committee luncheon.

2:15—(Ballroom) O.M.E.A. General Meeting.
President's address.
Minutes.
Naming of Committees.
Treasurer's Report and Report of Finance Committee.
Referring Resolutions to Resolutions Committee.
Committee Reports.

5:00-6:30—(Roof Garden) Entertainment.

9:00-11.30—(Roof Garden) Entertainment.

TUESDAY, FEBRUARY 28

MORNING:

9:00—(Convention floor) Registration.

9:30—(Banquet Hall) Joint session (O.M.E.A.-A.M.E.U.).
Addresses by members and officers of The Hydro-Electric Power Commission of Ontario.

12:00-12:30—(Roof Garden) Entertainment.

AFTERNOON:

12:30—(Concert Hall) Joint luncheon (O.M.E.A.-A.M.E.U.).
Civic greetings Mayor H. E McCallum, Toronto
Speaker: Dr. J. Markowitz, Toronto.
Subject: "Pepper Pot"

2:30—(Ballroom) O.M.E.A. general meeting Committee Reports.

5:00-6:30—(Roof Garden) Entertainment.

6:45—(Concert Hall) Joint Dinner (O.M.E.A.-A.M.E.U.).
Speaker: Lance Rumble, Representing Management, General Motors Products of Canada Ltd.
Subject: "Back Talk from the Rumble Seat."
Music and Floor Show.

9:30-11:30—(Roof Garden) Entertainment.

WEDNESDAY, MARCH 1st

MORNING:

9:00—(Convention floor) Registration.

9:30—(Ballroom) O.M.E.A. General Meeting.
Election of District Officers and Directors.
Election of Officers.
District Reports.
New Business.

AFTERNOON:

2:00—An invitation as been extended by The Hydro-Electric Power Commission of Ontario to visit the laboratories on Strachan Avenue. Bus transportation will be provided. Details will be announced during the convention.
O.M.E.A. 1950 Executive Committee will meet following the close of the convention.

A.M.E.U. PROGRAM

MONDAY, FEBRUARY 27

10:00-6:00 p.m.—Registration (Convention Floor).

2:00 p.m.—Balloting for Offices closes.

2:15 p.m.—Convention Session (Banquet Hall).
President's Address—J. C. Keith.
Reports from Committee Chairman.

3:00 p.m.—Paper: L. V. Hunt, Meter Conversion Engineer, H.E.P.C.
Subject: "Progress on Meter Conversion".



FEW PEOPLE are busier than J. Clark Keith, President of the A.M.E.U (left), and George F. Hutcheson, President of the O.M.E.A., these days. Both will be in action at the joint annual convention in Toronto where approximately 1,000 delegates are expected to register.

3:45 p.m.—Paper: E. E. Sparrow, Chairman, Workmen's Compensation Board, Toronto.
Subject: "Accident Prevention and Workmen's Compensation".

5:00-6:00 p.m. — Entertainment—Kummercial Klub (Roof Garden).

8:30-10:30 p.m.—Registration—Roof Garden.

9:00-11:30 p.m. — Entertainment Kummercial Klub (Roof Garden).

TUESDAY, FEBRUARY 28

9:00-6:00 p.m.—Registration (Convention Floor).

9:30 a.m.—Joint session with O.M.E.A. (Banquet Hall).
Addresses by members and officials

(Continued on page 32)



W. R. MATHIESON, Secretary, A.M.E.U., and Assistant Secretary, O.M.E.A., with his able assistant Mrs. N. E. Ferguson, doing last minute chores before the joint annual convention on February 27, 28 and March 1 at the Royal York Hotel, Toronto.

SYNCHROTRON

(Continued from page 27)

The electrons, shot off a heated tungsten filament by means of an X-ray gun, whirl around inside the donut, attaining an energy of about two million volts and almost the speed of light. They are then further accelerated, by the application of radio-frequency voltage, to their final energy of 70 million volts. At this stage the radio-frequency voltage is turned off, the electrons leave their orbit and strike a tungsten target where they produce an X-ray beam.

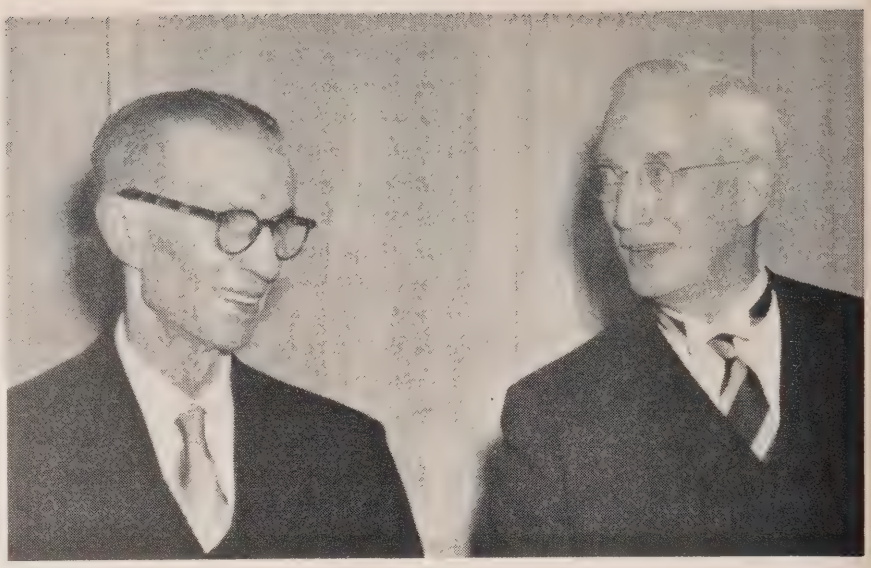
Auxiliary equipment includes a starting mechanism, which feeds direct current into the magnet at the beginning of the operation, a 2,900-kva capacitor bank, a 10-kw air-and-water cooling system, a vacuum pumping system, and control equipment. To ensure the safety of the operator, the control panel is located in a separate room from the synchrotron, and is so designed that only two switches are needed to put the machine into full operation. The first turns on the starting equipment, starts the flow of cooling water and air, and runs the magnet up to its operating excitation. The second turns on the timing circuits and the injection and radio-frequency voltages, putting the synchrotron into full operation. A timer is provided which cuts off the X-rays after a predetermined period. In addition, there are two safety switches in the machine room which must be in a certain position before the machine can be operated.

Because of the penetrating properties of the X-rays produced by the synchrotron, the machine room which houses it is an underground concrete room specially excavated for that purpose beside the Queen's physics building, Ontario Hall. With the exception of the magnet, all equipment was moved from Ontario Hall to the machine room down a ramp connecting the latter with the control room. The magnet was lowered directly into the machine room, and the roof closed over it.

Official Opening

Official opening of the synchrotron took place on January 27. Present at the ceremony were Dr. W. D. Coolidge, world-famed inventor and former Director of the General Electric Research Laboratory in Schenectady, now its X-ray consultant; Dr. G. C. Bateman of the Atomic Energy Control Board; J. C. Macfarlane, Vice-President of the Canadian General Electric Company; R. N. Edwards and A. E. Hudson of the U.S. General Electric Company; Dr. J. K. Robertson, head of the Department of Physics, Queen's University; Dr. J. A. Gray, Chown Research professor in the Department of Physics, (who with his collaborators, Dr. H. M. Cave and Dr. D. T. Roberts, will conduct nuclear experiments

(Continued on page 33)



LAST PHOTOGRAPH of a great Torontonian, Ex-Mayor Thomas L. Church, M.P., was taken three days before his death, by Hydro Photographer, J. Burt Helling, at Toronto Electric Commissioners' banquet for Mayor H. E. McCallum and Toronto City Council members. Mr. Church, left, was chatting with Magistrate R. J. Browne.

"TOMMY" CHURCH

AFFECTIONATELY known as "Mister Toronto", Thomas Langton Church, M.P., one of Ontario's most colourful and dynamic figures, is dead. Mr. Church, who devoted 52 years of his life to public service, was intimately linked with the pioneers who crusaded for Hydro.

He joined forces with Sir Adam Beck and John R. ("Black Jack") Robinson, a leading Toronto editor, to help bring the benefits of low-cost power to Ontario. He was said to be as much responsible for the birth of the great publicly-owned enterprise as any other public figure of those early days.

In fact, it was said of him that he was a champion of anything he believed to be in the public good.

Literally thousands called him "Tommy" and most of those thousands he could call by their first names.

Fifty-two years of Tommy Church's lifetime were spent in service to the two things closest to his heart—Toronto and the Empire. But his heart was big enough to embrace a wide range of other interests, including Canada and the Argonaut football club. It has been said that if the Empire ever fought to the last man, that man would be Thomas Langton Church—still fighting.

Never was there a man in civic affairs or Parliament who fought so fiercely for his convictions. But it is doubtful if there ever were such a vigorous campaigner who was so polite to his opponents.

Tommy Church was born at Toronto, January 30, 1873, of Irish parentage. His career in public life began in 1898. In that year he was elected to the High School Board in Toronto. He became an Alderman in 1905, starting the political rise which took him to the Mayor's chair and kept him there for seven years. He served as Mayor of Toronto from 1915 to 1921, the longest period any Mayor had ever held the office. He retired from the mayoralty field in 1921, and entered the federal field, in which he had been active up to his death, as Conservative member for North Toronto and Toronto East Centre.

Tommy Church was a Director of the Canadian National Exhibition for 15 years and a Trustee of the Toronto General Hospital for 17 years. For seven years he was a Director of the Consumers' Gas Company and of the Public Library Board. He occupied the position of Chairman of the Toronto Board of Health, and was for many years Chairman of the Toronto Harbor Commission as well as having served as Chairman of the Toronto Board of Police Commissioners for six years. For two years he occupied the Presidency of the Canadian Union of Municipalities, and at different times was President of the Ontario Municipal Electric Association, the Hydro Radial Union, and the Ontario Municipal Association.

His friends were legion. There is a story told about Tommy that his admiration for Sir Adam Beck would pop out at the oddest moments, something like a premature burst from a loaded rifle. No matter what the subject, be it foreign affairs, or taxation, if Tommy were there, sooner or later it would come: "Sir Adam Beck, greatest man that ever lived."

ANOTHER STEP FORWARD

(Continued from page 9)

60-cycle networks within the Sudbury district as well as other distribution systems in the Nipissing, Timiskaming and Abitibi districts.

All Hydro consumers in the Sudbury area use 60-cycle power except heavy industry in the immediate vicinity, including the large International Nickel Company at Copper Cliff, four miles from Sudbury, which uses 25-cycle power. Other 25-cycle areas are the gold-mining municipalities of Timmins and Kirkland Lake. Power for the 60-cycle consumers is supplied from various plants in Northeastern Ontario, including generating stations on the Wanapitei, Sturgeon, South and Montreal Rivers, while the 25-cycle power is supplied by the Commission's Abitibi Canyon Generating Station, augmented by power from plants on the Mattagami River.

All existing high tension transmission lines in the Sudbury area have been linked with the new frequency changer station. In this way, the Commission is able to convert power to either frequency as day-to-day demands dictate.

Transformer Facilities

At the same time, the station is equipped to transform or step down 60-cycle power to the proper voltage before it is transmitted to the various distribution points in the vicinity of Sudbury. Two 8,000-kva, 115/24 kv transformers at the Sudbury station went into service on September 11, 1949, providing 22,000-volt, 60-cycle power for the City of Sudbury and the surrounding rural areas.

While the frequency changer facilities at this station, are, at present, aiding the 60-cycle system on peak, the role which this station will play in the distribution of power in the next few years is even more significant.

When Hydro's new 42,000-kilowatt (56,500 hp) Tunnel Development on the Mississagi River, north of Thessalon, is placed in operation later this year, the additional 60-cycle power will also be fed into the Sudbury Frequency Changer Station. Tunnel Development is being built primarily to meet increased demands for both 60- and 25-cycle power in the Sudbury, Nipissing, Timiskaming and Abitibi districts.

New Tie-Line

Additional power will also be made available to Sudbury and other Northeastern Ontario consumers when the Des Joachims project on the Otawa River is completed. Power will be transmitted from Des Joachims, initially at 115,000 volts, over a new 230,000-volt line to LaCave, and transmitted further over a new 115,000-volt line being built to connect with Hydro's Crystal Falls Generating Station on the Sturgeon River via North Bay.

The Crystal Falls plant is already linked to the frequency changer station by a new 115,000-volt, 60-cycle transmission line built last year. It is anticipated that power from the Des Joachims development will be made available to Northern Ontario consumers in October this year when the new Des Joachims-Crystal Falls line is scheduled for completion. Additional 60-cycle power will also be transmitted over this line when the LaCave development is brought into operation in 1952. In this connection the Commission, in its plans for the Sudbury station, has made provision for increasing its present capacity when it becomes necessary.

In view of the power situation in Northeastern Ontario during the past few months, the link between the northern and southern systems at Sudbury is fraught with even greater significance. During the Fall of 1950, and in succeeding years, it is fully expected that sufficient power can be made available from the Ottawa River plants to meet a substantial portion of the off-peak requirements of Northeastern Ontario. In this way, plants in this part of the province will be able to maintain the water levels in their storage areas to meet demands during peak seasons.

IN OFFICE 19 YEARS



CYRUS FLOMMERFELT

who has been elected Chairman of Chippawa Hydro-Electric Commission for 1950 has established something of a record for public service. Mr. Flommerfelt has been a member of the village commission for 19 years but has never contested an election having been returned to office each year since 1931 by acclamation. Formerly associated with the Ontario Commission as an electrician at the Queenston-Chippawa Generating Station, Mr. Flommerfelt retired in 1942.

GREAT PUBLIC

Continued from page 20

ing audience for those charged with the responsibility of generating, transmitting and distributing electric energy in Ontario.

"To be sure, governments and commissioners change, and let us be thankful that we live in a land where the people can change governments," continued the speaker. "Someone of more than virgin political purity will say solemnly 'our objection is not to government appointments but to party appointments.' Is party government necessarily an evil thing," queried the speaker. "Does not all history demonstrate—and the experience of our own day convince us—that the Party System is the best yet devised for the Government of a free people, and indeed the only guarantee of a continued freedom? Parties are not permitted to exist in totalitarian, police states."

In conclusion, Mr. Reid told the delegates that "most of us have lived long enough to realize that virtue does not sit securely enthroned in one party while vice seeks to hide her face in another. Let us frankly admit," he emphasized—"for it is folly to deny,—that there are forces at work whose aim it is first to discredit and then to destroy every institution of freedom."

Albert G. Jennings, the Secretary-Treasurer of the District, presented Mr. Reid with a pen and pencil set on behalf of the District for his contribution to civic affairs.

Later on in the evening Mr. Reid presented Mr. Jennings with a radio on behalf of the District, for his contribution to civic affairs.

Following an outline by H. H. Leeming, Director of Hydro's Frequency Conversion Program, of what had taken place with respect to frequency conversion during the past year, the following officers were elected: President, A. O. Leslie, Scarboro; Past President, Loftus H. Reid, Toronto; Vice-President, G. F. Pownall, Mimico; Secretary-Treasurer, A. G. Jennings, East York.

District Directors: G. Pattinson, Cooksville; Alex. Schaefer, Bolton, and W. R. Dale, Brampton.

The Chairman of The Hydro-Electric Power Commission, R. H. Saunders, who was the guest speaker at dinner, declared that as far as the allocation of costs to the 25-cycle and the 60-cycle areas was concerned, he was going to personally investigate this matter. He intimated that if his investigations proved any unfairness he would feel it his duty to ask for a change.

He told the meeting that the Dominion of Canada in 1949 produced 45,000,000,000 kilowatts of power, and of this, The Hydro-Electric Power Commission of Ontario had developed 14,600,000,000 kilowatts.

SOCRATES STARTED IT

(Continued from page 6)

ing was developed as an outgrowth of suggestions made in various regions by veteran operators. Material for the manuals or study guides was submitted by various operating staffs, then compiled and edited by G. A. Ironside, Hydro's Technical and Trade Training Officer. In all there are eight manuals which become progressively more advanced. The course is such that it could be separated and made available to municipalities for the training of their new operators.

Those who are working with the young men who are Hydro's newest recruits as operators-in-training reveal the trainees themselves are enthusiastic about the question and answer method of learning. They get at the "core of things" quickly and are able to understand the theory from practical demonstrations on the job at the time. That is what trainee operators like and why they feel that they are getting much out of the new course and are retaining that knowledge.

Whether he realizes it or not, the young man who applies for a position with Hydro as an operator-in-training will be studying by a method which is centuries old. But this system—the Socratic method—has been proven sound and effective and that is why Hydro has adopted it to give operators thorough and complete training.

HOMEMAKER'S SHOW

(Continued from page 10)

on C-Day (Conversion Day) in order that mobile conversion crews could gain access to the house to do the necessary work. All types of electrical appliances were very much in evidence on all three floors of the departmental store during the show. These appliances were in use in the various cooking schools and on display in some of the exhibits. There were heat-controlling light weight irons, electric blankets, floor polishers, washing machines, electric ranges, driers, automatic ironers, dish washers, refrigerators and many others too numerous to mention.

A rather unique feature was the breakfast settings of eight well known Toronto families. These settings were replicas of the families' own breakfast rooms and showed style trends, and in some cases their morning menus.

The Homemakers' Show comprised over seventy interesting and informative exhibits ranging from slipcover clinics to dish gardening and flower arranging, and no doubt the hundreds of visitors who had the privilege of seeing these displays took along many helpful hints and suggestions for their homes and hobbies.

Made Debut In Hydro Film

WARREN WILSON, the lad who made his screen debut in the Hydro film "Light With Father," in 1947, has been acclaimed as one of Canada's talented young actors, according to radio columnist Bob Kesten.

Now 12 years of age, he has appeared in a number of Canadian motion picture shorts and on several CBC radio programs.

His first radio show, says Kesten, was the Christmas, 1947, broadcast of "Alan and Me," followed by a leading role in another CBC serial and parts in other individual shows. Besides acting in "Light With Father," he has appeared in the National Film Board's "Family Circle," as well as playing small roles in other films.

An enthusiastic puppeteer, Warren takes a keen interest in the puppet group at Boys' and Girls' House Library, where he has assisted in the production of a number of puppet plays. In addition, he is enrolled in the juvenile classes at Lorne Greene's Academy of Radio Arts.

The ambition of this young man is to make acting his profession. His appearance in "Light With Father" and his subsequent roles seem to have got him off to a good start.

CONVENTION PROGRAMS

(Continued from page 29)

of The Hydro-Electric Power Commission of Ontario.

11:45 a.m.—Announcement of Officers for 1950.

12:00-12:30 p.m. — Entertainment—Kummercial Klub Roof Garden).

12:30 p.m.—Joint Luncheon with O.M.E.A. (Concert Hall).
Chairman, J. C. Keith.
Civic Greetings—Mayor Hiram E. McCallum, Toronto.
Speaker: Dr. J. Markowitz, Toronto.
Subject: "Pepper Pot".

2:30 p.m.—Panel I, City group (Banquet Hall).
Chairman: J. E. Teckoe Jr., Galt.
Paper: V. B. Ross, Manager, Power Transformer Division, Apparatus Department, C.G.E.
Subject: "Maintaining Voltage Regulation on Distribution Systems".
Paper: E. D. Bent, Chief Engineer, Wire and Cable Division, Northern Electric Co.
Subject: "Improved Wire and Cable for Electrical Utilities".
Paper: C. W. Boadway, Communications Engineer, H.E.P.C.
Subject: "Planning a Mobile Radio System".
Panel II, Town Group (Hall D, Convention Mez.)
Chairman, E. A. Washburn, Ingersoll.
Paper S. R. McBrien, Aylmer.
Subject: "Distribution Hints".
Paper: L. J. Passmore, Delhi.
Subject: "Water Heaters".
Paper: S. Webster, Tillsonburg.
Subject: "Is Municipal Accounting Up to Date?"
Panel III, Accounting and Office Administration.
(Hall C, Mez.)
Chairman, H. A. Howard, Thorold.
Program Chairman, Geo. Appleton, Toronto.
Paper: R. A. Read, J. D. Woods and Gordon Ltd.
Subject: "Work Simplification".
Paper: R. S. Potter, Hamilton.
Subject: "Meter Records".
Paper: D. N. Durward, Galt.
Subject: "Depreciation of Miscellaneous Fixed Assets".

5:30-6:30 p.m.—Entertainment, Kummercial Klub Roof Garden).

6:45 p.m.—Joint Dinner with O.M.E.A. (Concert Hall).
Chairman, G. F. Hutcheson.
The Harvey Perrin Choir.
Speaker: Lance Rumble, Representing Management, General Motors Products of Canada Ltd.
Subject: "Back Talk From The Rumble Seat".
Music and Floor Show.

9:30-11:30 p.m. — Entertainment — Kummercial Klub (Roof Garden).

WEDNESDAY, MARCH 1

10:00-10:30 a.m. — Business Session (Banquet Hall).
Report of Secretary-Treasurer.
Introduction of 1950 Executive.

10:30 a.m.—Paper: W. R. McCaffrey, C.S.A.
Subject: "Standardization—Its Significance to the Power Utilities".

11:00 a.m.—Introductory Remarks on Research Division, W. P. Dobson, Director of Research, H.E.P.C.
Paper: J. W. Suggitt, Research Engineer, H.E.P.C.
Subject: "Chemical Control of Brush".
Paper: B. Kellam, Research Engineer, H.E.P.C.
Subject: "Control of Blackflies".
Paper: J. H. Waghorne, Senior Research Engineer, H.E.P.C.
Subject: "Grounding".

2:00 p.m.—An invitation has been extended by the officials of The Hydro-Electric Power Commission of Ontario to visit the Laboratories on Strachan Avenue. Bus transportation will be provided. Details will be announced during the convention.
Adjournment.

SYNCHROTRON

(Continued from page 30)

with the new machine); and other officials of the University.

Following the ceremony, guests were taken on conducted tours of the physics laboratory, where the synchrotron was on display. Salient features of the machine were explained by Mr. Edwards and Mr. Hudson.

Installation of transformers, conduits and ducts, cables and wiring, as well as fluorescent lighting, in connection with the synchrotron, was carried out by James Harris, electrical contractor and Commissioner of the Kingston Public Utilities Commission.

WHO CAN TOP THIS

(Continued from page 21)

to Mr. Stonehouse which epitomized the sentiments of those present to honor him. Mr. Ellerker said that it was an occasion of joy as well as regret. "We have all enjoyed working with Mr. Stonehouse who has always been fair in his decisions," the chairman said. "He has never spared himself to do whatever was required of him. His untiring efforts on behalf of the commission is one of the chief reasons for its success."

Those who spoke at the meeting included Ian Stubbs, Regional Engineer of H.E.P.C., from London; J. E. Burney, Mayor from 1930 to 1934; W. A. Dunlop, Mayor from 1934 to 1939; Floyd Rumford, Mayor from 1939 to 1946; Glen Kernohan, Mayor in 1947; and Ross McCahill, who is starting his second term as Chief Magistrate.

Among the many congratulatory messages which Mr. Stonehouse received was a telegram from Hydro Chairman Robert H. Saunders.

HAMILTON H.E.C. PLANS NEW BUILDING

General contract for a new administrative and service building has been awarded to the W. H. Cooper Construction Company Limited by the Hydro-Electric Commission of the City of Hamilton, it was announced recently. Work was started on the new, three-storey structure early in January. Total cost of the building will be $1,145,725 and contract price is $1,119,670.

HONOURED BY COMMISSIONERS

Retiring as Secretary-Manager of Tavistock Public Utilities Commission, Alvin Neeb was recently honoured with the presentation of a pen and pencil set in recognition of his services. Reeve Robert Rudy of Tavistock gave the address, while the presentation was made by Commissioner Ernest C. Piehl.

WORTHWHILE CONTRIBUTION

Hydro Savings Club Organized by Woodbridge Public School Students — Hold Conservation Poster Contest

SPARKED by the appeal for power conservation issued by Chairman Robert H. Saunders, the pupils of Woodbridge Public School recently held a conservation poster contest.

Purpose of the contest, which was divided into sections corresponding to the school grades, was to bring home to the students and their families the importance of saving electricity during periods of temporary shortage.

Many effective posters were submitted, some of the best being drawn or painted by New Canadians.

In addition to holding the contest, the school organized a Hydro Savings Club, whose members pledged themselves to assist the Hydro Commission in saving power wherever possible. They visited their neighbours and asked them to turn off lights and electric appliances when not in use, and to use any other means to conserve electricity.

Commented Principal H. H. Sawdon: "The girls and boys had a lot of fun making the posters, and I feel that their efforts are a worthwhile contribution to Hydro conservation in Southern Ontario."

First prize winners were Lorna Helliwell, Bonnie Anderson, Valerie Wakeland, Helen Walton, Elvira Gailitis, Wayne Colton, Doreen Longhouse, Bill Gailitis. Hydro Savings Club officers: George Scott, President; Fred Clements, Vice-President; Gertrude Aitchison, secretary.

DR. CHAPMAN DIES
Was Active in O.M.E.A.

A MAN who was known to practically every member of the great Hydro family throughout Ontario, Dr. William J. Chapman, Chairman of the St. Catharines Public Utilities Commission and an Honorary Vice-President of the O.M.E.A., died recently at his home.

For many years, the name of Dr. Chapman has been closely identified with the activities of the Ontario Municipal Electric Association, while he was to the forefront in civic affairs. He had held the highest offices in the O.M.E.A. and was known as an energetic, forthright and vigorous debater, and was always ready to proclaim his beliefs with commanding emphasis.

In his professional life, Dr. Chapman had attained a pre-eminent position. He was an active member of the St. Catharines General Hospital where he served as surgeon-in-chief.

A native of Holland Landing, he was not only an outstanding student when attending school, but he added to his laurels at university and graduated from Trinity University Medical College in 1904. Dr. Chapman is unofficially reported to have been in his 70th year.

Surviving are his widow, the former Gladys Woodruff; one son, Alfred; a daughter, Nancy; three brothers and a sister.

Hydro Acquires Rideau Plant

WITH the recent acquisition of the assets of the Rideau Power Company Limited in Merrickville and the Kemptville Milling Company in Burritt's Rapids, the Commission has added some 1,200 horsepower to its resources in Southern Ontario.

Situated on the Rideau River, the plant of the Rideau Power Company was built in 1915, with a second unit added in 1919. Before being taken over by the Commission, its power output was distributed to consumers in Merrickville, and to the Kemptville Milling Company for distribution in Burritt's Rapids as well as to power and rural consumers and a number of summer cottagers in that vicinity. In addition, since August, 1939, power was supplied to Hydro's transformer station at Smith's Falls for use in the Eastern Region of its Southern Ontario System.

According to the terms of its charter, the Rideau Power Company was authorized to distribute power only in Merrickville. Consequently the Kemptville Milling Company purchased power for distribution outside the town.

In order to make full use of the power generated by the Rideau Power Company, the Commission purchased the distributing facilities of the milling company as well as the generating and distributing facilities of the power company. For some time at least it is expected that distribution outside the area of Merrickville will be maintained in the same manner as before the purchase. It is further expected that the town of Merrickville will take over the distribution of power to its own consumers, and will contract for power with the Commission.



AFTER THE STORM



VOL. 37 MARCH, 1950 NUMBER 3

HYDRO'S LA CAVE Development near the Town of Mattawa was in the news recently when workmen completed the impressive job of carving out a new course for the Ottawa River to divert the water during the building of the main dam and power-house. Vast quantities of earth, rock and ice hurtled skyward as 13 tons of dynamite were set off to blast out a rock "plug," at the upper end of the new diversion channel.

Photograph by E. A. Johnston



HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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Volume 37 Number 3

MARCH, 1950

COVER SHOT

SAID to be one of the oldest conventions in Canada, the joint annual sessions of the O.M.E.A.—A.M.E.U. this year marked the 41st meeting of these associations. Held in the Royal York Hotel in Toronto on February 27, 28 and March 1, this year's meeting was well attended with a registration of approximately 1,000 delegates. One of the highlights of the convention, the joint dinner on February 28, depicted on this month's cover, attracted a full attendance.

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Convention Impressions

"SHOCKING, ISN'T it?" asks Norma Crane, Niagara Falls, as D. T. Flanhery, Niagara Region, and W. B. Denyes, Preston Light and Power Co., examine Electric Service League of Ontario display during intermission.



"DO YOU sleep with it outside or inside the covers?" C. A. Veig Paris, and J. C. Kaiser, Reeve of Humberstone, admire beard Reeve G. Bukator, hopeful contender for whiskerino honors at Chippav



CONDUCTED TOURS through Hydro's Strachan Avenue laboratory rounded out a three-day joint convention. Here, delegates examine bolometer, a radar device, used in locating overheated transmission line joints.



"THIS IS your banquet ticket," Mrs. G. A. Farrell tells J. T. Mc Mayor of Renfrew, shown registering. F. A. Archer, O.M.E.A.-A.M Convention auditor looks on. Over 1,000 delegates attended this



Spring and Beauty

When daffodils begin to peer,
With heigh! the doxy over the dale,
Why then comes in the sweet o' the year;
For the red blood reigns in the winter's pale.

DAFFODILS, as well as love-lorn maidens, are just as symbolic of Spring in Ontario as ever they were in Shakespeare's England. But they are not indigenous to Canada. These popular blooms—we refer to the daffodils, of course—are not found in a state of nature, growing wild. They come from our city gardens—the best of them from the conservatories. As far as uncultivated Nature is concerned, the "sweet o' the year" in Ontario is heralded by the delicately tinted hepatica and the frail but exquisite trillium. The white trillium—there is a red one also—is the floral emblem of our province, although a Gallup poll conducted a few years ago suggested that very few of us were aware of the fact. Many thought it was the pussy-willow, which can be gathered earliest of all our native blooms, and, endowed with a robust growth and enduring qualities, was believed to reflect more nearly the character of our people.

In the leafy moulds of the wood lots and the maple groves there is a further blossoming as the blue and the yellow violet, the Jack-in-the-pulpit, the marsh marigold and the blood root open their petals to the embraces of soft winds and warming rains. Among the last to make its Springtime debut is the beautiful pink Mayflower.

In all its undertakings, Hydro has been studious to preserve or to improve by cultivation the beauties of Nature. The grounds surrounding the Commission's stations at Niagara are a favorite resort for tourists in spring, summer and autumn. In the spacious premises of the old Ontario Power Company are found trees and shrubs of a variety and in a profusion unequalled assuredly in any other locality in Canada if anywhere on the North American continent. In the Spring the pink-and-white blossoms of the Red Buds share popular favour with the yellow forsythia, while the freshening sunlight is everywhere perfumed by the lilac and the magnolia. Queenston, as well as the stations nearer the Falls can boast a fine showing of tulips.

On their journeyings over Ontario highways, motorists must often have noticed the aluminum-painted transformers of the Commission's distribution stations. There are from 180 to 230 of these stations in each of the nine regional areas into which the power systems of Hydro are now divided. A move is afoot to change the colour to green in order that these stations, about which plots of carefully-tended turf are planted may blend still more harmoniously with their natural surroundings.

Why does Hydro bother about things like that? Well, think it over . . . After all, the activity of a public service organization like Hydro cannot be entirely confined to producing electricity. While providing the people of Ontario with the civilizing influence of the finest electrical services, Hydro is also making its contribution in helping enhance the beauty of the Ontario scene.

Spring is the renascence of Beauty. Let us apply its lessons wherever we can.

Still Greater Era Ahead

Commission Chairman Robert H. Saunders Predicts Magnitude of Future Expansion To Outrival Present Program — Addresses O.M.E.A.-A.M.E.U. Delegates

GREATEST single factor in the continuing industrial expansion of Ontario is the availability of low cost power in abundance. Steam plants are not a satisfactory answer to the rapidly increasing demands for electricity. Further large scale waterpower developments must and will be undertaken, outrivalling in magnitude even those included in Hydro's present construction program.

These observations were made by Hydro Chairman Robert H. Saunders, when addressing a joint convention session of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities in Toronto. G. F. Hutcheson, of Huntsville, President of the O.M.E.A. and J. Clark Keith of Windsor, President of the A.M.E.U. presided.

"Where can we look for more power?" was the rhetorical question put at the beginning of a crisp but comprehensive survey of the power situation in the province. And Mr. Saunders pointed out that, as far as steam power was concerned, the low cost element, so essential to our industrial development, disappeared. Power derived from steam generation cost





A.M.E.U. EXECUTIVE for 1950, elected at the 41st annual convention in Toronto. Back row, left to right, Gerald Lillie, Toronto; R. S. Reynolds, Chatham; R. H. Martindale, Sudbury; N. A. Belfry, Uxbridge; O. H. Scott, Belleville; Norman Grandfield, Brantford. Front row, W. R. Mathieson, Toronto, Secretary-treasurer; M. W. Rogers, Carleton Place; Robert Butter, Owen Sound, President; J. Clark Keith, Windsor, retiring President; A. W. H. Taber, Fort William. Other A.M.E.U. officers who were absent when photo was taken are V. A. McKillop, London; G. E. Chase, Bowmanville; H. A. Howard, Thorold; and N. J. Douglas, Smiths Falls.

some 7.7 mills per kilowatthour at the plant. Power produced from falling waters cost only 2.58 mills per kilowatthour.

Battle For Waterpower

"Low cost power in abundance," declared Hydro's Chairman, "can be found only in hydro generation. It was for this reason that your commission considered as two of its most important duties in 1949 the continuance of its efforts to bring about a ratification of the St. Lawrence Agreements and the passing of a new treaty providing for the permanent diversion of the waters of the Niagara.

"After almost two years of effort," Mr. Saunders reported, "the treaty has been signed by both Canada and the United States. It now awaits ratification. We do not anticipate any difficulty."

The Prime Minister of Ontario, Hon. Leslie B. Frost, the Hon. L. B. Pearson, Federal Minister of External Affairs, His Excellency, H. Hume Wrong, Canadian Ambassador to the United States, and the members of their staffs had, Mr. Saunders said, co-operated with the Hydro Commission in every step of the new Niagara treaty negotiations. The Commission extended its sincere thanks to them all.

Hydro's Chairman went on to say the new treaty provided abundant safeguards for the scenic beauty and crest protection of the Falls. After these safeguards had been looked after, the balance of the water, it was understood, would be available for power purposes. Canada had a right to 50 per cent of the flow which could be diverted to power purposes, plus the 5,000 cubic feet per second additional flow brought about by the Ogoki and Long Lac diversions. These latter undertakings carried out by the Commission during the war years, by re-routing northward-flowing rivers into Lake Superior and the Great Lakes System, had in-

★



RETIRING PRESIDENT of the A.M.E.U. J. Clark Keith is presented with a silver tray by Past President J. E. Teckoe, Jr.

creased the flow at Niagara and on through Lake Ontario into the St. Lawrence.

Redevelopment At Niagara

It was the Commission's intention, Mr. Saunders stated, to proceed immediately with the preliminary steps leading up to the new work at Niagara. Actual construction would start as soon as possible after the ratification of the treaty. The ultimate scheme of redevelopment to make use of the water made available to Ontario was expected to result in a total increase of power of well over 800,000 horsepower.

"May I throw out a word of warning," said Mr. Saunders, at this juncture. "It will be some time before any appreciable amount of labor is needed for construction work at Niagara. We don't want to encourage a rush of workers looking for jobs when, for some time to come, there will be nothing for them to do."

On the St. Lawrence front the battle was still in doubt.

"We regret exceedingly," said Mr. Saunders, "that the 2,200,000 horsepower of electric power available in the St. Lawrence, one half of which would come to Ontario, must continue to be wasted. You can rest assured that our Commission will continue its efforts to bring about ratification of the St. Lawrence Seaway and Power Agreements or, in the alternative, will seek permission to proceed with the development of the river's power resources in co-operation with the State of New York or any other United States group."

(Continued on page 23)



SUBWAY EXCAVATION aroused great interest among delegates to O.M.E.A.-A.M.E.U. convention. Among these sidewalk superintendents are F. Watson, Thamesville; A. Bain, Thamesville; O. F. Schnaufer, Toronto; and N. Dickson, Thamesville.



FRIENDLY CO-OPERATION was evident in all phases of the convention, as is pictured here. R. A. Lee of Kingston, ties shoelace for C. A. Graham, Fergus, as W. Burtch watches.



"WHAT DAY does he speak?" R. L. Dobbin, Peterboro, looks it up in the program as Hon. George Challies, H.E.P.C. Vice-Chairman, and H. B. McNulty, Port Dalhousie, await the answer.

Conversion of Meters

HYDRO'S Frequency Standardization Division Meter Department is leaving no stone unturned in its efforts to reduce the cost of meter conversion to the municipalities.

This observation was made by L. V. Hunt, Hydro's Meter Conversion Engineer, when addressing members of the Association of Municipal Electrical Utilities at the annual convention in Toronto on February 27. His subject was "Progress in Meter Conversion."

Mr. Hunt revealed that work in the laboratory indicated that satisfactory conversions, meeting all requirements of the approval specifications of the Department of Trade and Commerce, Ottawa, were possible with minor replacements of material. He stated that several sample meters were made up, in accordance with these laboratory devised techniques, and received Ottawa's approval on their suitability for use on billing meters.

Since that time, Mr. Hunt declared, his department had "got its feet wet" on the job of meter conversion. Commencing last October, some 7,000 meters were replaced in Scarborough Township, and last month a start was made in Sarnia rural areas, where several hundred were installed.

The speaker said that with the 25-cycle meters available from Scarborough, they had been able to commence conversion operations in the meter shop on a substantial scale. Getting into the shop in the middle of December, some 2,500 meters had been converted to date. In doing this, the engineer added, answers were found to many uncertain factors.

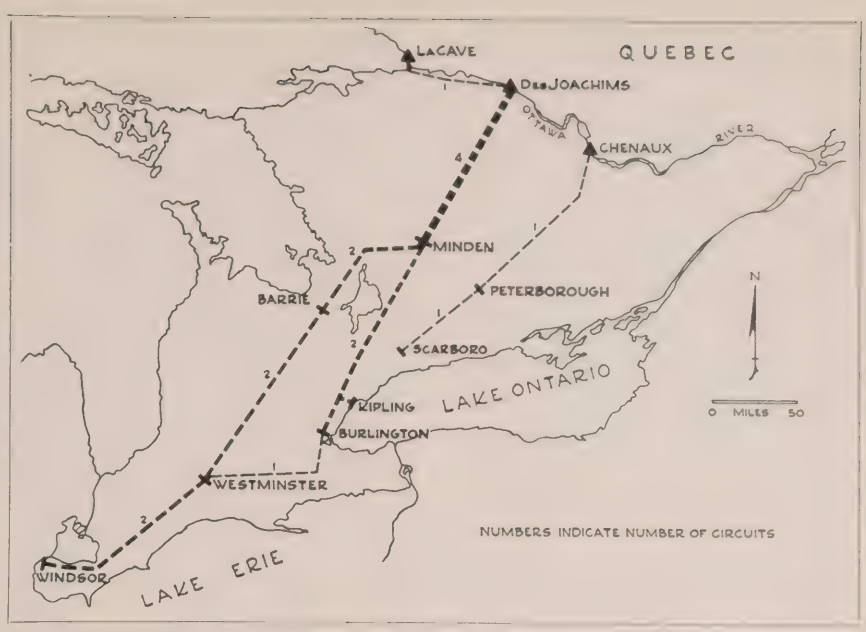
Mr. Hunt said that for instance, in the problem of magnets, it was found that out of 1,000 meters converted, 100 pairs of magnets failed to hold up to strength. The material cost of this particular item, therefore, had turned out to be approximately 25 cents per meter.

The speaker predicted that when certain causes were eliminated in a few months' time, labor costs on meter conversion were expected to fall from the present level of $2.00 to below $1.50 per meter. He stated that charges on single-phase meters at the present time were $4.50 for two, and $5.00 for three wire. From what has been learned of probable costs, it appeared as if these prices could be reduced ultimately by at least a dollar, he added.

Mr. Hunt revealed that the convertibility of a meter no longer depended on the date of manufacture but on two considerations — the ability of the converted meter to measure up to the specifications for approval of the Standards Division, Ottawa, and the economics of the conversion or whether the value of the meter after changeover was worth the expenditure required to convert it. If the meter type failed to meet either of these conditions, he said, then it would definitely be in the obsolete class.

The engineer explained that acting on this evaluation, Hydro had made a conversion of a meter sold prior to 1929, and by substituting some material from a modern type, had produced a meter for 60-cycle operation endowed with high torque and extended overload characteristic which placed it in the modern class for performance.

This meter type, he revealed, had been submitted to Ottawa for approval, and while there were a few points yet to be "ironed out," Hydro's meter conversion engineers were quite optimistic as to the outcome. If successful, this approval would mean the moving over of approximately another 50,000 meters from the obsolete class, and the further cutting of expenditure for the purchase of new 60-cycle meters.



HEAVY DOTTED line indicates four 230-kv transmission lines which will carry power from Hydro's Des Joachim's and LaCave developments to Minden Switching Station. From Minden, two lines, also indicated on the map, will run south, one to Kipling Terminal and the other to Burlington. Two additional lines will run from Minden to Essa Transformer Station, near Barrie, and will be extended to Westminster Frequency and Transformer Station, Pond Mills, two miles south of London.

KEY POINT IN GROWING NETWORK

SCHEDULED for initial completion by July this year, the new Minden Switching Station, located between Minden and Haliburton, approximately 50 miles north of Lindsay, is progressing according to schedule.

This new station will be a key point in the transmission of power from Hydro's Des Joachims and LaCave developments on the Ottawa River, when they are brought into service in 1950 and 1952 respectively.

Four 230-kv tranmission lines will carry power from these developments to Minden. From there, two lines will run south, one to Kipling Terminal and the other to Burlington. Two additional lines will continue from Minden to Essa Transformer Station, near Barrie, and will be extended to Westminster Frequency Changer and Transformer Station near London.

First stage of the 2½-million-dollar project, involving switching facilities for two lines from Des Joachims to Minden and two from Minden to Toronto and Burlington, is expected to be completed by July 1 of this year. The other stages will follow as required, with completion of the work expected by 1952.

The switching structures when completed will include twelve 230-kv oil circuit breakers (four to go into operation for the first stage). Among other facilities at the site will be the main control building, from which the circuits will be controlled. This building will also contain relay and communication equipment, as well as carrier current facilities. In addition, several modern homes are to be constructed for the operators. These houses will be built in close proximity to the new Minden station and will overlook Lake Kashagawigamog.

DEBATES ENLIV

Twenty-Three Resolutions Included On Heavy Business Agenda — Power Costs, Frequency Standardization And St. Lawrence Discussed

TWENTY-THREE resolutions were dealt with by the Ontario Municipal Electric Association during its recent annual convention at the Royal York Hotel, Toronto. It was a lengthy if not a record-breaking agenda. While much of the business had been handled in committee before the meeting and could be dispatched without debate, resolutions respecting the increased cost of power, the contribution of existing 60-cycle municipalities to the cost of the Frequency Standardization Program, the equalization of wholesale power rates and O.M.E.A. representation on The Hydro-Electric Power Commission of Ontario evoked keen discussion by the delegates.

Cost Of Power

A resolution advanced by the Welland Hydro-Electric Commission opposed the increase in the cost of power and petitioned the H.E.P.C. to use the Stabilization of Rates Fund to take care of the increased cost.

Following a spirited discussion, a motion of non-concurrence by D. P. Cliff of Dundas, Chairman of the Resolutions Committee, was sustained by a bare majority.

Suffering a similar fate first at the hands of the Resolution Committee and then from the delegates, only this time by preponderating majorities, were three resolutions from the St. Catharines Public Utilities Commission, on matters relating to the increase in rates, the progress of the Frequency Standardization Program and the suggestion that the O.M.E.A. might conduct an independent investigation into the cost of power.

It was pointed out by Mr. Cliff that all the O.M.E.A. districts were being furnished with progress reports at convenient intervals and also that there were no facilities enjoyed by the O.M.E.A. for carrying out an investigation into the cost of power.

A resolution from the Niagara Falls Hydro-Electric Commission was to the effect that the O.M.E.A. strongly urge upon The Hydro-Electric Power Commission of Ontario that, in future, any changes in the cost of power requiring changes in interim rates be announced to the municipalities at least three months prior to the effective date on the increase in interim rates and that H.E.P.C. be requested to keep the municipalities fully advised from time to time of the trend of the cost of power to them. This resolution was carried.

Want Equalized Rates

A marked divergence of opinion, although not quite so evenly divided as on the cost of power question, occurred when a resolution from District No. 8 was read by Mr. Cliff. This urged that The Hydro-Electric Power Commission of Ontario seriously consider the establishment of an equalized rate for the transmission of power to all municipalities in the province. In this case the Resolutions Committee suggested through Mr. Cliff that the resolution be referred to the H.E.P.C. with a request to report to the Committee.

Supporting the resolution, J. T. Barnes of Sarnia, pointed out that, in the early days of Hydro, Niagara was practically the only source of power. The H.E.P.C., he said, now received power from many sources over an elaborate grid system. This, he felt, should automatically dis-



NNUAL O.M.E.A. SESSIONS

count any advantage enjoyed by one municipality over another in the cost of power transmission. Higher costs of power had, he believed, a tendency to handicap many of the smaller municipalities in the matter of attracting industries. He was sure that an equalized wholesale rate would promote a more even prosperity throughout the province. Opposing this view was Mr. Barnes' name sake, Thomas Barnes of Niagara Falls, who quickly gained the support of Dr. W. H. McMillan, Mayor of Thorold, and several other delegates. Mayor W. R. Tomlinson of Port Elgin, now lined up with Mr. Barnes of Sarnia and it looked for a moment as if a debate were about to develop between the northern and southern municipalities, with Bertram Merson of Toronto supporting the Resolution Committee's suggestion that the resolution be referred to the H.E.P.C. for report. When a vote was taken, however, the majority of the delegates were found to be in favor of the original resolution, urging consideration of an equalized rate.

Debate On Frequency Costs

Contribution by 60-cycle municipalities to the cost of Frequency Standardization in 25-cycle municipalities was the subject of a resolution sent up by District No. 1, O.M.E.A., which was worded as follows:— "Resolved that The Hydro-Electric Power Commission of Ontario be requested to agree with the principle that the 60-cycle areas should pay only their share of the cost of changing Quebec Power Company facilities for the generation and transmission of power, and no other conversion costs of privately and municipally owned equipment in the 25 cycle areas. And that the Commission be requested to get a further report from the Clarkson Gordon firm on the cost of conversion to the 60-cycle areas on the basis mentioned."

Col. A. A. Kennedy, Chairman of the Owen Sound Public Utilities Commission, supported the resolution. He claimed that H.E.P.C. had not given an entirely satisfactory picture of the reasons why 60-cycle municipalities be called upon to shoulder a substantial portion of the cost of standardization. He wanted to know how much additional revenue would be coming from the 25-cycle private consumers unaffected by the change; what percentage of the cost was charged both to 25-cycle and 60-cycle municipalities; and what the increase in rates was going to be to rural consumers as a result of the standardization program.

A motion of non-concurrence brought in by the Resolutions Committee carried when the matter was put to the vote.

Membership On Commission

The question of O.M.E.A. representation on The Hydro-Electric Power Commission of Ontario also came before the delegates in the form of two resolutions — one from the Sudbury Hydro-Electric Commission and the other from the O.M.E.A. Board of Directors.

Nearly all the delegates present were of the opinion that the Commission should be enlarged to a membership of five, and the majority — as was revealed in the voting — believed that two of these members should be appointed by the O.M.E.A. This view was embodied in an amendment proposed by C. S. Rickers, Chairman of the Port Dalhousie Public Utilities Commission, and carried. Mr. Rickers challenged the procedure of Government appointment. He argued that the choice of an O.M.E.A. representative should be a matter of determination for the O.M.E.A. alone and that it should be taken out of the hands of the Government which should be prepared to give the Association's candidates automatic approval. In principle, his opinion

(Continued on next page)





V. B. ROSS
Toronto



B. KELLAM
H.E.P.C.



S. R. McBRIEN
Aylmer

received the support of Mayor W. S. Beaton of Sudbury and H. O. Hawke of Galt.

Joint Meeting Approved

The St. Catharines Public Utilities Commission submitted a resolution respecting the annual convention as follows: "Be it resolved that future winter conventions of the O.M.E.A. be held separate from the convention of the Association of Municipal Electrical Utilities and confined strictly to the business of the Ontario Municipal Electric Association, without entertainment and without the oral reports from The Hydro-Electric Power Commission, which reports should be circulated in advance of the convention."

The opinion of the meeting, however, was solidly aligned behind the sentiments expressed by Keith C. MacLeod, Chairman of Stamford Township Public Utilities Commission. Mr. MacLeod believed that the annual convention in Toronto afforded a unique opportunity for the O.M.E.A. and the A.M.E.U. members to get together. Hydro success had been predominantly due to co-operation based on a sense of fellowship He trusted that that sort of thing would be encouraged in the future as in the past. On a show of hands, it was decided to carry on with the joint annual meeting, although it was suggested that it might be advisable to make the opening date a Tuesday instead of a Monday in order that the "migration" to Toronto might not be handicapped by Sunday curtailment of travel facilities.

St. Lawrence Development

Impatience over the delay in enacting the permissive legislation for the carrying out of hydro-electric developments on the St. Lawrence River was voiced in a strongly-worded resolution from the Toronto Township Hydro-Electric Commission — "Resolved that the O.M.E.A. meeting in convention endorse immediate action leading to the completion of the St. Lawrence Project and that the convention name a special committee chairman for this purpose; that the various zones appoint members of this committee; that this committee be instructed to urge municipal and other organizations to take effective action leading to this development."

Non-concurrence on behalf of the Resolutions Committee was moved by Mr. Cliff, who stated that the Committee was prepared, however, to support a motion by District No. 8 "that this Association urge upon the Federal Government that it make strong representations to the Government of the United States that action be taken at the earliest possible moment

ONTARIO MUNICIPAL ELECTRIC ASSOCIATION

Officers Elected For 1950

HONORARY PRESIDENT—
Robert H. Saunders

HONORARY VICE-PRESIDENTS—
F. Biette, Chatham
C. J. Halliday, Chesley
G. S. Matthews, Peterboro
H. O. Hawke, Galt
K. A. Christie, Toronto
A. G. Jennings, East York

PRESIDENT—
D. P. Cliff, Dundas

PAST-PRESIDENT—
G. F. Hutcheson, Huntsville

VICE-PRESIDENTS—
1—F. H. Plant, Ottawa
2—W. Dixon, Arthur
3—Dr. M. P. Benger, Port Arthur
4—A. O. Leslie, Scarboro
5—D. P. Cliff, Dundas
6—J. W. Monteith, Stratford
7—P. R. Locke, St. Thomas
8—W. P. Bolton, Windsor

DISTRICT DIRECTORS—
1—G. E. Findlay, Carleton Place
J. Harris, Kingston
2—W. E. Theaker, Paisley
S. R. Sargeant, Orillia
3—C. H. Moors, Fort William
J. R. Pattison, Fort William
4—A. G. Jennings, East York
G. F. Pownall, Mimico
5—R. Pierson, Brantford Twp.
K. C. MacLeod, Stamford
6—C. K. Merner, New Hamburg
G. W. Gordon, Kitchener
7—H. R. Henderson, Woodstock
R. W. D. Lewis, London
8—E. C. Morand, Tecumseh
D. P. Herring, Sarnia



C. W. BOADWAY
H.E.P.C.



L. J. PASSMORE
Delhi



DR. J. MARKOWITZ
Toronto

to complete the necessary arrangements to start the St. Lawrence River power development so that the industrial and economic expansion of the whole area served by this great river both north and south of the international boundary be not further retarded."

"That's a prayer all right," commented Elmer Wright of Toronto Township. "It's a resolution with very little in it. The other resolution to which you advise non-concurrence proposes to get some action instead of merely hopeful waiting. We want to appoint a committee to work with the municipalities on the St. Lawrence development. Let us go out and show the people that you and I want this thing."

"I don't think we have a right to interfere in a Federal matter in the way the Toronto Township resolution suggests," opined A. G. Jennings, Chairman of the East York Township Hydro-Electric Commission. "Unfortunately our friends to the south seem opposed to what we want here" — Mr. Jennings meant the U.S. Senate and not the State of New York — "and I believe it would not be the correct thing for us to carry out such action as Mr. Wright proposes. We must let our Federal Government deal with it."

"Mr. Jennings is right," concurred Mayor Beaton of Sudbury. "I think we may embarrass the Government and the Hydro Commission by such a resolution."

Like Mr. Jennings and Mayor Beaton, the majority of the delegates decided to support what they considered to be the more appropriate resolution of District No. 8.

A plea for help in financing new construction, line replacements, Frequency Standardization and the installation of flat rate water heaters was made by the Riverside Public Utilities Commission. Supporting his commission's resoluton, Chairman Edmund Cecile said that it was practically impossible for some munipalities to issue debentures due to their financial condition. He wanted the Provincial Government or Hydro to set up some way of financing their end of the change-over to 60 cycles. Chairman Walter B. Curtis of the Aylmer P.U.C. spoke in a similar vein. It was decided to refer the matter to The Hydro-Electric Power Commission of Ontario.

Other Resolutions

That a part-time secretary be appointed.

Carried.

That the Board of Directors be authorized to revise the membership fees and the scale of rates in keeping with the revenue required, and that such Constitutional Amendment be effective for the year 1951.

Carried.

That the O.M.E.A. request The Hydro-Electric Power Commission of Ontario:

(1) To set up standards for Municipal Electric Distribution Systems in consultation with the Executive of the O.M.E.A. and the A.M.E.U. or a committee set up by these Associations for that purpose.

(2) To make a periodic inspection of each Municipal Distribution System upon request.

(3) To send a report of such inspection to the Municipal Commission for its information.

Carried.

That the licensing of electricians be on a provincial basis, and that the matter be referred to the Provincial Government.

Carried.

That the O.M.E.A. is not in favor of any change in the allocation of costs for frequency standardization as established by the Clarkson Gordon report.

Defeated.

That the H.E.P.C. be asked to review the present municipal pension and insurance scheme and submit ways and means for increasing such pension benefits.

Carried.

That the Ontario Municipal Electric Association and the Canadian Standards Association be requested to institute action and to adopt a policy which will bring results in the standardization of electric range switches throughout the Province of Ontario.

Carried.

That the O.M.E.A. bring to the attention of the various municipal councils the dangerous hazards created during wind storms by very high television and F. M. antennae mounted on houses adjacent to power lines; also the danger to passing pedestrians, in which case the municipality may be liable; and the possible danger to private property.

Carried.

Resolutions of appreciation to Hydro News, Royal York Hotel and other hotels providing accommodation for delegates, to the Press and to the Entertainment Committee.

Carried.



LANCE RUMBLE
Toronto



L. V. HUNT
H.E.P.C.



E. E. SPARROW
Toronto

Efficient Administrative Units

Organization and Functions of Regional Offices Outlined By R. L. Hearn

GREATER efficiency and closer contact with consumers are being attained by Hydro through the nine Regional Offices established at strategic points throughout the province to handle the heavy volume of work and various local problems, R. L. Hearn, the Commission's General Manager and Chief Engineer stated, when addressing a joint session of the O.M.E.A. and A.M.E.U on February 28.

During the past year, Mr. Hearn said, the Regional Offices had been set up and staffed and were now functioning in accordance with the recommendations covering the re-organization of the Commission's staff. The province had been divided into nine Regional Offices: Eastern, East Central, Toronto, Niagara, West Central, Western, Georgian Bay, Northeastern and Northwestern.

Efficient Administrative Units

"It is," he added, "a source of gratification to the Commissioners and the executive officers of the Commission that these regional offices, in such a short period of time, have become such efficient administrative units."

Continuing, the speaker said that many difficulties had been encountered at the outset. New office and staff accommodations had to be secured. Staff had to be recruited or transferred from head office. In many cases the new staff was not acquainted with the new territory and found the work more difficult on that account, and all this reorganization work had to be carried on without interruption or delay to the heavy volume of work which was passing through the administrative branch of the Commission.

Having transferred a large portion of its administrative activities to the Regional staffs, who were in intimate contact with the muncipalities and other customers, the Commission, he said, was in much better position to understand and to handle promptly and efficiently the problems which frequently arose.

Reviewing some of the functions of the Regional Office and its relationship with Head Office on the one hand, and the municipal customers on the other, Mr. Hearn said that the chief executive officer of the Commission was the General Manager and Chief Engineer. Under him responsibility was divided into the two main branches of Hydro activities — Engineering and Administrative — each branch being headed by an Assistant General Manager.

The Engineering branch, under Dr. Otto Holden, was responsible for the selection of new power sources and for the design and construction of the necessary facilities for the generation, transformation and distribution of the power necessary to supply the demands of the various consumers throughout the province.

The Administrative branch, under A. W. Manby, was responsible for the operation as well as for customer relations, finance, accounting and all supervisory functions which stem from the Commission's activities under the Power Commission Act.

The work of the Administrative branch in Head Office was divided into four main divisions, each of these being headed by a director as follows: Consumer Service Division Director, M. J. McHenry; Operations Division, J. M. Hambley; Comptroller's Division, E. H. Banks; and Frequency Standardization Division, H. H. Leeming.

The divisions, Mr. Hearn declared, operated to develop and carry out policy as formulated by the Commission and Management to render assistance and advice to the Regional Offices and to exercise a certain amount of supervision over Regional activities.

Within each region, he said, the internal organization followed a similar pattern. Working under the supervision of the Regional Manager, departments were set up whose duties correspond to three of the divisions in Head Office namely, Consumer Services, Operations and Accounting.

Work Of Area Offices

A further subdivision of the work in the Region was made by setting up Area



J. H. WAGHORNE
H.E.P.C.



W. P. DOBSON
H.E.P.C.



R. A. READ
Toronto

Offices within each region. These Area Offices handled the work formerly done in the Rural Offices, and in addition, handled all operation and maintenance within the area, including that of many of the smaller municipalities, as well as constructing a portion of the rural lines.

Continuing, Mr. Hearn revealed that although the Consumer Service Engineer, the Operations Engineer, and the Accountant in each region reported to the Regional Manager and worked under his supervision, they also maintained a continuous liaison with their corresponding divisions and departments in Head Office. In this way they could speedily obtain assistance and advice on points of policy and procedure, exchange ideas on matters pertaining to their departments and expedite business in general.

As a result of the Regional Office organization, the speaker said, a large volume of the administrative work and activities of the Commission, formerly handled at Head Office, was now handled in the Regions. The Regional Offices were in a position to carry on all ordinary business with the municipalities and when reference to Head Office was necessary they were organized to channel such business into the appropriate division or department without delay and to expedite all matters, on behalf of the municipalities which might require attention.

Intimate Knowledge

There were some items of municipal business, the speaker said, which required the formal approval of the Commission and all such applications by the municipalities should first be submitted to the Regional Office. The Regional Manager and his staff were required to deal with all such matters, attaching their recommendations and processing all applications for approval from the standpoint of information and statistics on file in the

(Continued on page 40)



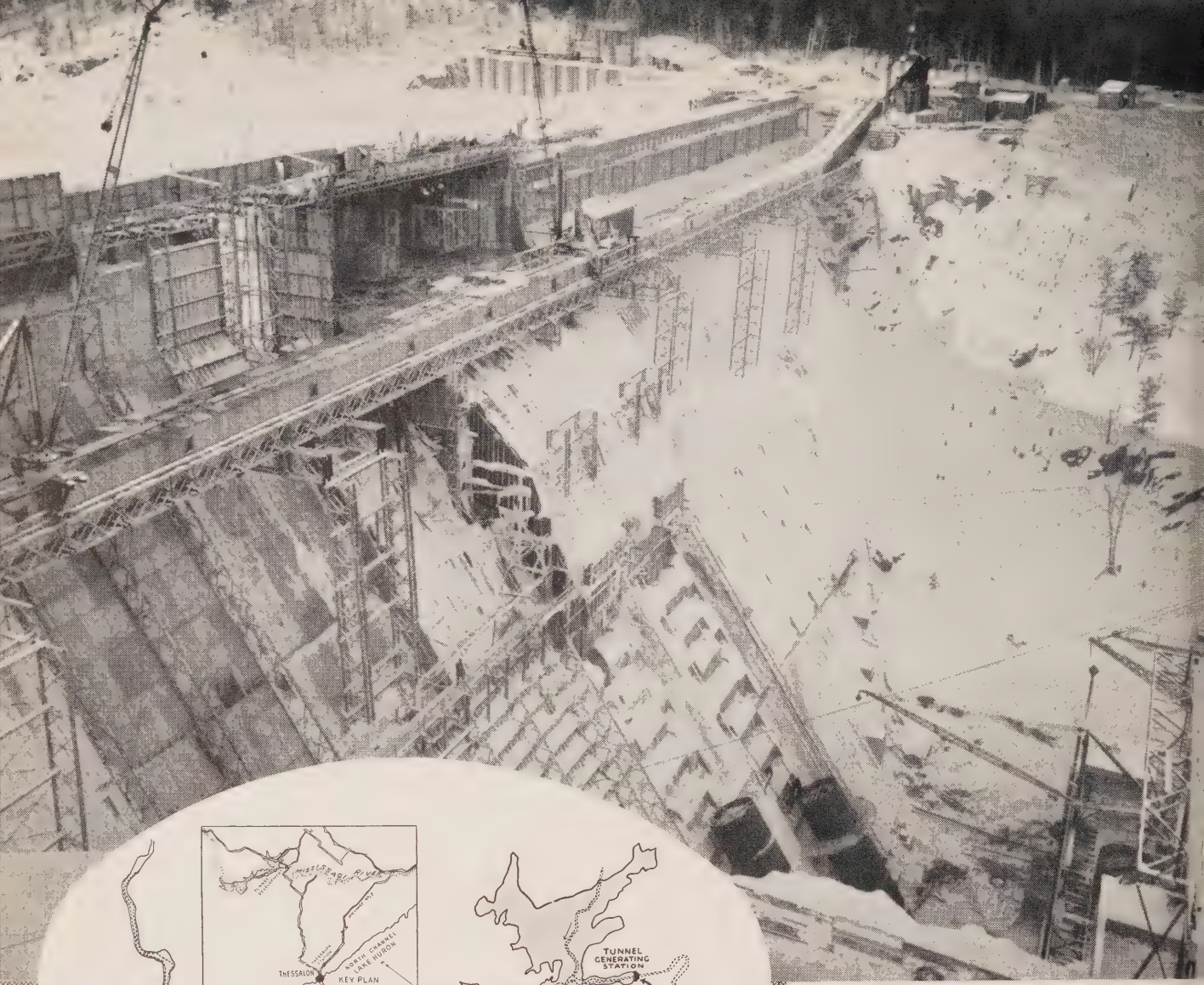
D. N. DURWARD
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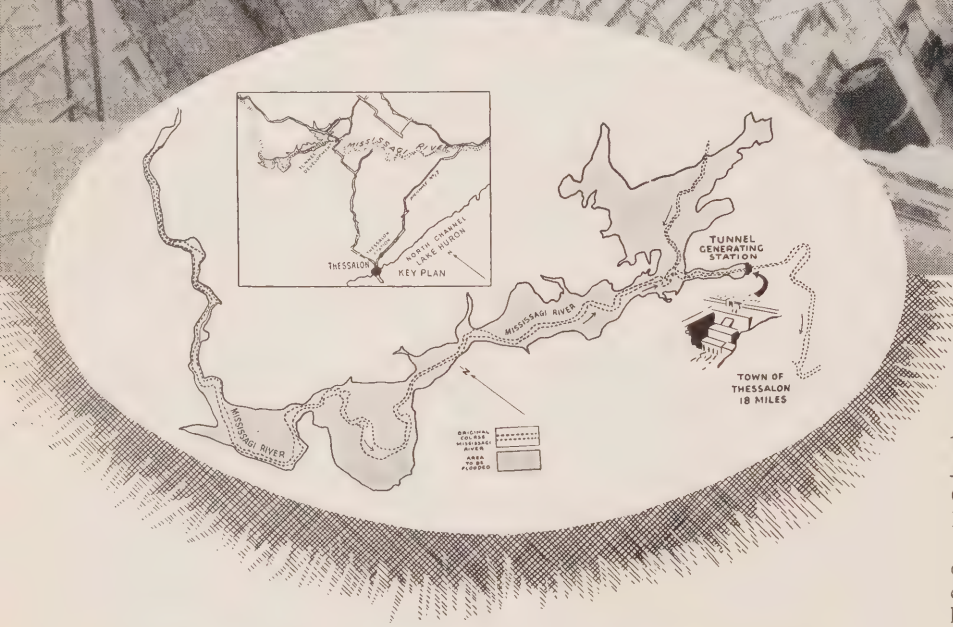


J. CLARK KEITH
Windsor



E. D. BENT
Montreal





MAIN DAM at Tunnel Development is the high power dam ever built by Hydro. Structure ri to a height of 235 feet and extends a d tance of nearly 1,000 feet across the t

TUNNEL DEVELOPMENT

Hydro's New Mississagi River Project Nearing Completion

by

Boyd L. Graham
Hydro News

EARLY this summer, consumers in the bustling "Districts" of Northeastern Ontario will welcome a fresh influx of Hydro power.

This new supply of hydro-electric energy for the mills and mines and the countless new enterprises in this particular section of the province will come from the heart of the rugged Algoma forests.

Here, at the site of Hydro's Tunnel Development, 20 miles northeast of the Lake Huron Town of Thessalon, the task of harnessing the brawling Mississagi River is approaching completion. With the Commission's Construction Department busily engaged on other urgent "jobs" throughout Ontario, the contract for the Tunnel plant is being handled by the Rayner Construction Company Limited in co-operation with Hydro's engineers.

Since 1947, when clearing and preliminary work was first undertaken, a start-

ling change has taken place around the rocky canyon which gave its name to this development. During the intervening months, a force of some 800 men has been engaged on a project which has involved the construction of the highest power dam ever built by the Commission.

Today, a solid wedge of concrete spans the deep gorge of the Mississagi for a distance of nearly 1,000 feet across the top. Rising to a height of 235 feet above its foundations in the river bed, the impressive, gravity-type structure dwarfs even the sheer walls of solid rock which hem the course of the turbulent river at this point.

Main Dam Complete

Building of the main dam and installation of the integral headworks or intake facilities is now virtually complete, except for installation of the control gates. The headworks system is located in the central upper section of the dam.

In addition, two steel penstocks have been erected on the sloping downstream face of the dam. Both 12 feet in diameter and approximately 240 feet long, the penstocks will be encased in concrete and will convey the water from the headworks control structure to the turbines in the powerhouse.

Turbines Installed

Work on the powerhouse being built at the foot of the main dam is also forging ahead rapidly. Structural steel for the framework has been placed while the turbines and their associated facilities have been installed in the base of this building. Tunnel Development, with a total output of 42,000 kilowatts (56,500 hp), will have two generating units, operating under a gross head of 215 feet. Space will be provided in the powerhouse for an air-conditioned control room, a battery room, a communication room, lunch room, locker and wash rooms — all located on the generator floor. An elevator shaft in the dam will provide access to a corridor leading into the powerhouse.

But several important phases of construction must be carried out before Tunnel Development is brought into operation.

For instance, closure of the upper portal of the 900-foot long diversion tunnel was effected on March 5. The tunnel — 30 feet in diameter — was blasted out of solid rock to divert the river from its normal course, permitting construction of the main dam to continue in the "dry."

Blocking of the diversion tunnel was accomplished by dropping two steel gates across the upper portal located upstream from the main dam. The closure gates — weighing 50 tons apiece — will be reinforced by pouring a concrete plug behind them.

With this operation completed the vast forebay of the Tunnel Development is beginning to fill with power-laden water. Extending upstream for about 12 miles, this large headpond will cover approximately 5,000 acres from which all useful timber has been cleared and turned into pulpwood and finished lumber for various purposes.

It is anticipated that this filling process will be finished within a few weeks. By that time, the water, having risen to a height of 190 feet, will exert approximately 15,000 pounds of pressure per square foot at the lower part of the dam. Until the development is in operation, the water will be passed downstream through nine sluiceways located to the east and slightly above the larger structure.

Concrete Sluiceways

These reinforced concrete sluiceways have been completed for the purpose of discharging surplus water during flood periods as a means of controlling the level

(Continued on page 23)

TWO STEEL penstocks—12 feet in diameter and 240 feet long—are to be encased in concrete on the sloping downstream face of the main dam. The penstocks will convey the water from the intake facilities at the top of the dam to the turbines in the powerhouse.



AFTER PASSING through the turbines located in the base of the powerhouse, shown under construction, the water will be discharged through four openings into a tailrace channel which will be carved from the bed of the river for a distance of approximately 1,800 feet.





FORESEES IMMENSE POWER POOL

ULTIMATE pooling of the vast power resources of half a continent was implied in an interesting address made by R. L. Hearn, Hydro's General Manager and Chief Engineer, speaking at the joint session of the O.M.E.A. and A.M.E.U. on February 28.

The speaker revealed that Hydro intends to develop a high tension interconnection or grid system at 60 cycles that eventually might tie in with Manitoba on the west, Quebec on the east, and U.S. states in the east and south so that such a projected, immense power pool could be formed. He emphasized, however, that definite details had not yet been worked out.

The development of a grid system in Ontario was held by the speaker as a possible first step by The Hydro-Electric Power Commission of Ontario in preparation for such an ultimate power pool.

North-South Tie-In

A further announcement by Mr. Hearn that an inter-connection would be developed this year between Hydro's Southern Ontario System and the Northeastern Region was of special interest to Northern Ontario delegates. He revealed that power soon would be available over a high tension line now being built to connect up Des Joachims Generating Station with the new LaCave switching station and thence to Crystal Falls Generating Station by way of North Bay. The ini-

(Continued on page 19)

May Tie In Manitoba, Quebec And Eastern And Southern U.S., Commission's General Manager Tells Convention Delegates

Utilities "On The Air"

C. W. Boadway, Hydro's Communications Engineer, Gives Interesting Paper On "Planning A Mobile Radio System"—Addresses A.M.E.U. Convention

THIRTEEN frequencies in the 152,-162 Mc range have been tentatively set aside by the Department of Transport for power utility use, C. W. Boadway, Hydro's Communications Engineer, informed A.M.E.U. members attending the City Group panel discussion during this year's annual convention in Toronto.

Speaking on the subject "Planning A Mobile Radio System," Mr. Boadway told his audience that it might be possible to obtain additional frequency assignments if developments warranted the use of further channels.

"Each of these frequencies will be assigned in such a way that the same frequency can be duplicated by a power utility not closer than 100 miles from the original assignee," the speaker continued. "Thus, 13 frequencies can be of service to a great many power utilities," he added.

Frequency assignments were generally obtained through careful negotiation with the Department of Transport, Mr. Boadway pointed out, but machinery was being set up whereby power utilities in Ontario would obtain engineering and administrative guidance from the Communications Committee of the A.M.E.U., who, in turn, would be responsible to the Department of Transport for tentative co-ordination and allocation of power utility frequencies on a non-interfering basis.

Once the need for a mobile service had been established, it was necessary to consider the total area involved; the location of the fixed station; the number of mobile units desired and the type of terrain to be covered.

Continuing, the speaker suggested that advice should be obtained on such things as the power output required, antenna height required, whether directional or high gain antennae should be used and the expected performance and serviceability of the equipment involved, keeping in mind that the lowest transmitter power consistent with proper operation should be used.

Equipment Important

"The type and make of equipment purchased must be decided by the purchaser alone," he stated.

In this connection, it was also pointed out that a high standard of performance should be demanded based on good engineering practice. Ruggedness was most important for this type of service as component failures due to mechanical vibration could be eliminated in manufacturing design.

Dealing with the location of the fixed or main station, Mr. Boadway stated that "the location will primarily be influenced by two main considerations."

First: A suitable location for erecting the antenna should be chosen.

Second: The site should have both power and communication facilities available.

These factors involved choosing a site very close to the main office — probably with the antenna on the roof and the transmitter in the same building, controlled either locally or remotely.

Ideal Location

"The ideal location of the fixed station is, of course, in the centre of the area to be served," the speaker also stated, "but in view of the fact that a mobile radio service is an emergency service, attention should be paid to the necessity of having a reliable means of communication between the transmitter and the control point."

Turning to the question of setting up the mobile station, Mr. Boadway stated that the location of the radio equipment was governed usually by the body style and accessories on the vehicle, having regard to accessibility and the possibility of accidental damage. The radio equipment itself might mount within the cab, it was pointed out, but, in most cases, suitable space would have to be found in the body of the truck. Further, it would be necessary to ascertain that the receiver had sufficient audio power output to override vehicle noises developed on bumpy roads and at high speeds.

"The power supply to the radio equipment must be adequate and dependable. This means that, in general, it will be necessary to install a heavy-duty, low speed cut-in, high-output generator and a larger capacity battery than originally supplied with the truck," the speaker concluded.

HYDRO AIDS POLIO VICTIM

Hydro is coming to the aid of Elaine Ricker, of Callander, in her fight against infantile paralysis.

Fourteen-year-old Elaine, stricken by polio, needs heat treatments as prescribed by doctors at the Toronto Sick Children's Hospital. Recently presented with an electric heating pad by the North Bay Rotary Club, she has been unable to use it as Hydro service was not available in the vicinity of the Ricker home.

However, special arrangements have now been made with Hydro to include the Ricker farm, a short distance south of Callander, in the rural program for 1950, and it is expected that the extension to the farm will be completed early this year.

Rideau Generating Station Acquired By Hydro



RECENTLY ACQUIRED by Hydro is the generating station of the Rideau Power Company on the Rideau River at Merrickville. Its output, amounting to some 1,200 horsepower, will continue to be delivered to the town, and also to consumers in Burritt's Rapids and vicinity through the distribution system of the Kemptville Milling Company, also purchased by the Commission.

Voltage Levels Major Problem For Utilities

V. B. Ross, C.G.E. Transformer Division Manager Addresses City Group Session During A.M.E.U. Convention

"MAINTENANCE of satisfactory voltage levels at the consumer's premises is the most important problem facing utility engineers today."

This declaration by V. B. Ross, Manager of the Transformer Division, Canadian General Electric Co. Ltd., Toronto, was made at the outset of his address to members of the A.M.E.U. during the annual convention in Toronto.

Dealing with the topic, "Voltage Regulation On Distribution Systems" during Panel 1, City Group session, the speaker pointed out that the only measures of quality which could be assigned to the kilowatthour were: constant frequency; continuity of service and satisfactory voltage levels.

"The most important of these three is satisfactory voltage," he stated.

In stressing the importance of maintaining a proper voltage, Mr. Ross referred to the Commission's Frequency Standardization Program by pointing out that existing 25-cycle feeders, at present maintaining satisfactory voltage levels, would, in many cases, have unacceptable voltage levels when changed to 60-cycle. This condition would be particularly acute on those feeders having a low power factor and a high ratio of peak load to light load, he added.

Continuing, the speaker pointed out that no recommended voltage levels had been definitely established and recognized on an international basis. However, one committee had suggested that a "favourable voltage" might range from 110 to 125 volts *at the point of utilization.*

Voltage might be regulated, Mr. Ross claimed, by adoption of three common methods: Bus regulation, individual feeder regulation or by supplementary regulation either in the feeder or in the branch in addition to bus regulation. These regulating methods could in most instances be enhanced by the use of shunt capacitors.

Other means of improving voltage levels which should also be given consideration, the speaker asserted, were:

1. Decreasing the load on existing feeders by adding more feeders in the same substation.
2. Decreasing the load on existing feeders by building a new substation and physically shortening the length of existing feeders by cutting off a portion. This severed portion to be fed from the ends of

(Continued on page 39)

"PUT BITE" ON BLACKFLY

Barney Kellam Tells A.M.E.U. Delegates Of Work Done By Research Committee To Control Northern Pest

PLAGUED by the blackfly for many years, the residents of the Hydro colony at Cameron Falls, with co-operation of the Commission's Research Committee on Insect Control, have been able to turn the tables and "put the bite" on this pest.

The story of how this was accomplished was unfolded by Barney Kellam, Research Engineer, in the Chemical Research Section of Hydro's Research Division, when addressing the A.M.E.U. delegates at the recent convention.

Speaking on the subject: "The Control of the Blackfly by Stream Treatment With DDT," Mr. Kellam told of the efforts of the Research Committee to discover a method of combatting blackflies which had been a source of annoyance to people at the Commission's northern outposts.

Cameron Falls community on the Nipigon River had been so infested with blackflies that appeals for assistance to combat this pest had been made frequently, and the problem finally had reached the Research Committee, Mr. Kellam stated.

Habits Are Studied

First, he related, the life cycle and habits of the blackfly were studied in detail. It was learned that the larvae live in running water attached to rocks and twigs or vegetation. With information made available to Hydro by Dr. Douglas Davies of the Ontario Research Foundation, the Committee realized that to combat the blackfly effectively, DDT should be added to streams in the spring when blackfly larvae are there in the greatest number.

Mr. Kellam stressed the need for a detailed map of the area involved, showing all temporary and permanent streams, so that all possible breeding places might be treated. Because the blackfly's activity is on the average about three miles from the stream, a circle whose centre was the particular colony involved was drawn with a radius of at least three miles.

At Cameron Falls, all streams within the circle were examined for blackfly larvae in mid-April. The speaker said that such examinations might also be made in October, but early spring when water temperatures are about 35 to 40°F. is preferable. Infested streams around Cameron Falls were marked for treatment. DDT emulsion was introduced at turbulent spots if possible, or in the absence of a turbulent place in the stream, mixing of the emulsion in the stream was assisted by stirring. Mr. Kellam reported that a more complete kill of larvae was obtained some distances downstream from the point of introduction of the DDT, so that the point might well be some distance outside the minimum three miles.

After marking the streams to be treated, the rate of flow of each stream was ascertained and the total quantity and rate of feed of DDT emulsion was calculated.

Avoid Harming Fish

Mr. Kellam told his listeners that the operating staff was warned not to exceed the concentration of DDT to avoid harming the fish. Before treating the streams, problems such as the correct rate of feed of DDT emulsion and the best type of container for the DDT had to be solved.

To determine effectiveness of treatment, a count was made of the number of larvae on a square inch of stone surface both before and after treatment. At Cameron Falls the number before treatment ran as high as several hundred per square inch. The speaker said that mortality ranged from above 95 per cent to as low as 60 per cent. A repeat treatment for those in the 60 per cent range usually finished the job.

Some time after the treatment at Cameron Falls, school children were examined for blackfly bites, and it was observed that not one child had suffered even a single bite. Reports from residents of Cameron Falls expressed great satisfaction with the results. For the first time in many years, these people had been able to enjoy the out-of-doors without being noticeably troubled by blackflies.

In concluding, the speaker made mention of a newly-developed formula which the U.S. Department of Agriculture has called Lindane. Tests have shown that Lindane emulsion is 85 per cent effective in killing blackfly pupa. Not yet on the Canadian market this emulsion will be tested by Hydro's Research Division as soon as it is available.

ADDRESSES HAMILTON ENGINEERS

Speaking at the recent annual meeting of the Hamilton Branch of the Engineering Institute of Canada, A. L. Malcolm of the Commission's Generation Department outlined the design features of the Des Joachims development. Mr. Malcolm was formerly Resident Engineer at Des Joachims.

He illustrated his talk with lantern slides, depicting the various stages of the vast project on the Ottawa River and some of the details of construction.

Following Mr. Malcolm's address, the film "Harnessing Horsepower" was shown, illustrating the work done on other power projects in Ontario over the last few years.

FORESEES IMMENSE

(Continued from page 16)

tial three units at Des Joachims are expected to be producing power in July this year.

Using a large map of Ontario which showed Northern and Southern Ontario in their proper perspective regarding area, and with the present high tension lines and the proposed inter-connecting high tension lines superimposed, Mr. Hearn pointed out the great advantages of having the Northern Ontario Properties tied in with Southern Ontario. He recalled that in 1947 the Southern Ontario System was inter-connected with tie lines between the Niagara, Georgian Bay and Eastern Ontario divisions. This meant that some 43 generating plants were connected and when the connection has been made with Northeastern Ontario through LaCave, about 60 generating stations would be connected, including the Ottawa River developments.

Importance of this inter-connection between the Southern Ontario System and the Northeastern System was evident, the speaker said, because the load factor of the Northeastern Region total load was in the neighborhood of 80 per cent monthly. This, he added, was much higher during all but the freshet months than the maximum load factor of which the combined generating facilities in the Region were capable.

Supply Additional Load

Because of this, Mr. Hearn said, there was an excess of peak generating capacity in the region, and this would be more especially so when the Tunnel Development came into operation. By means of an exchange of energy with the Southern Ontario System via the LaCave-Crystal Falls tie line, it would be possible to supply additional load without the necessity of adding generation. This tie line, which would have a transmission capacity of 75,000 kilowatts, he said, would be capable of transferring as much as 1.5 million kilowatthours a day of surplus energy from the Southern Ontario System to the Northeastern Region. Of this, 800,000 kilowatthours per day might be converted from 60 cycles to 25 cycles by means of the new frequency-changer station at Sudbury. Some years, he added, depending on the water situation, the flow of energy might be in the reverse direction.

A further extension of this idea, Mr. Hearn stated, contemplated the interconnection of the Commission's Northeastern Region with the Thunder Bay System by constructing a total of 250 miles of line between the Tunnel Generating Station and the Aguasabon Generating Station.

With the completion of the LaCave-Crystal Falls line, the speaker pointed out, there would exist, with the exception of the above gap of 250 miles and an inter-connection with Hydro Quebec at Beauharnois, a complete tie between systems from Shipshaw in the east to within a few miles of the Manitoba border in the west.

Benefits Recognized

The benefits to be derived by means of interconnection were now so well recognized that large areas of the United States were blanketed by interconnected systems which included public as well as private systems.

It was visualized, Mr. Hearn concluded, that in the not too distant future, Hydro would be in the centre of a huge interconnected system. This would extend from Shipshaw on the Saguenay River in Quebec, or even Grand Falls on the Hamilton River in Labrador (when developed) in the east to the Winnipeg River plants in Manitoba, with interconnection at Windsor, Niagara and Cornwall, with United States interconnections extending as far south as Florida and west from Detroit to Chicago and the Mid-West States.

A.M.E.U. "Town" Panel

Discuss Ways and Means Of Improving Efficiency Of Operation in Smaller Municipalities

SUGGESTIONS for improved efficiency of operation in smaller municipal utilities were the order of the day at the "Town" panel discussion at the recent A.M.E.U. convention in Toronto.

Under the chairmanship of E. A. Washburn of Ingersoll, three speakers presented papers: S. R. McBrien of Aylmer spoke on "Distribution Hints," L. J. Passmore of Delhi on "Water Heaters and Off Peak Controls," and S. Webster of Tillsonburg queried "Is the Municipal Accounting System up to Date?"

Setting three criteria for improvement of service, the Aylmer Superintendent outlined the methods adopted in his municipality for bettering street lighting. "We should approach any betterment," he said, "with these three thoughts in mind: "Will it please the consumer? Is the construction sound and permanent? Is it a step towards lower costs?"

He went on to say that the recent modernizing of street lighting in Aylmer seemed to fulfil all these conditions and at the same time added immeasurably to the up-to-date appearance of Aylmer streets.

Other topics dealt with by Mr. McBrien included the treating of wood poles, distribution behind the consumer's premises, transformers and service trucks.

The second speaker described various types of water heaters, including those available from the H.E.P.C. and those developed by the Delhi Public Utilities Commission. He pointed out the advantages and disadvantages of each type, and concluded that, on the whole, flat rate heaters were more economical, to both consumer and utility, than metered heaters.

Mr. Passmore also outlined in detail the control of flat rate heaters by pilot wire, the use of carrier-current control transmitters, and wired radio control.

The final paper of the panel, given by Mr. Webster, took the form of a criticism of certain rulings listed in the manual "Uniform Accounting for Municipal Utilities," published in 1915. The speaker contended that many of its rulings were out of date, and suggested in particular that Section "A" of the book be used as a basis for all municipal accounting systems, instead of being applied only to larger cities. This, he said, would do away with the necessity for Sections "B" and "C", which in his opinion only served to confuse matters.



S. WEBSTER
Superintendent-Secretary Tillsonburg P.U.C.

He questioned the necessity of such a complete breakdown of charges as now obtains, pointing out that "with 232 different accounts, a Public Utilities Commission is very much overburdened with red tape."

E. A. Hodgson, H.E.P.C. accountant for the Western Region, was on hand by request to answer Mr. Webster's criticisms. He conceded that on several points the manual was out of date, but maintained that in general it was very applicable, even in 1950, though it had been published as long ago as 1915. Replying to Mr. Webster's suggestion of group insurance for all utilities, Mr. Hodgson stated that a great deal of thought had been given to the question, but that it had been considered an extremely complicated matter, especially with regard to fire insurance, and that at the moment it was not warranted.

Convention



E.V. BUCHANAN
LONDON



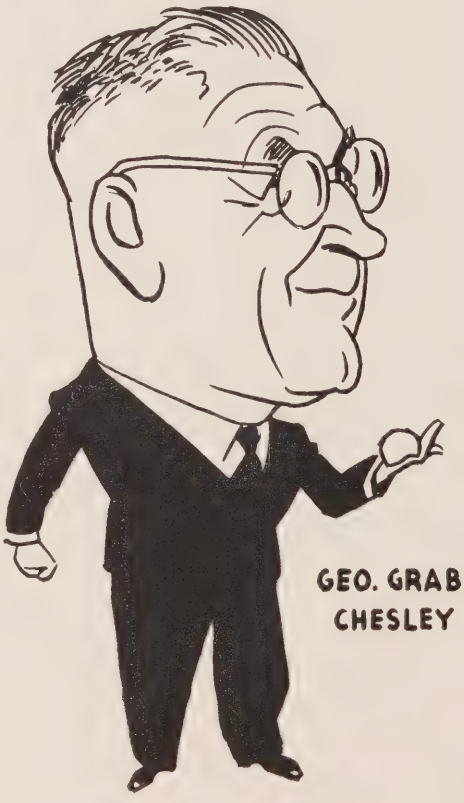
LOFTUS REID
TORONTO



STAN. G. THOMS
CHATHAM



S.W. CANNIFF
OTTAWA



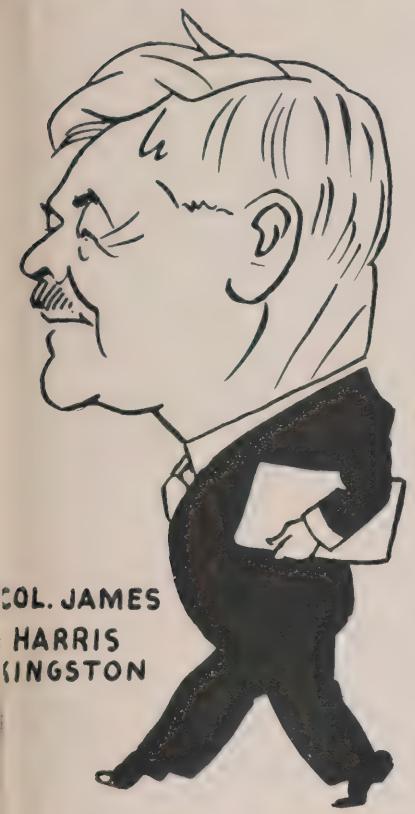
GEO. GRABB
CHESLEY



S.E. THOMPSON
NIAGARA FALLS

Caricatures

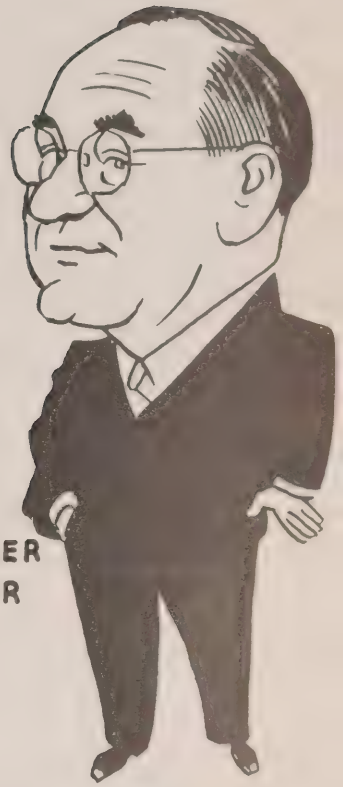
by W. B. MAC



COL. JAMES
HARRIS
KINGSTON



J. R. PATTISON
FORT WILLIAM



DR. M. P. BENGER
PORT ARTHUR



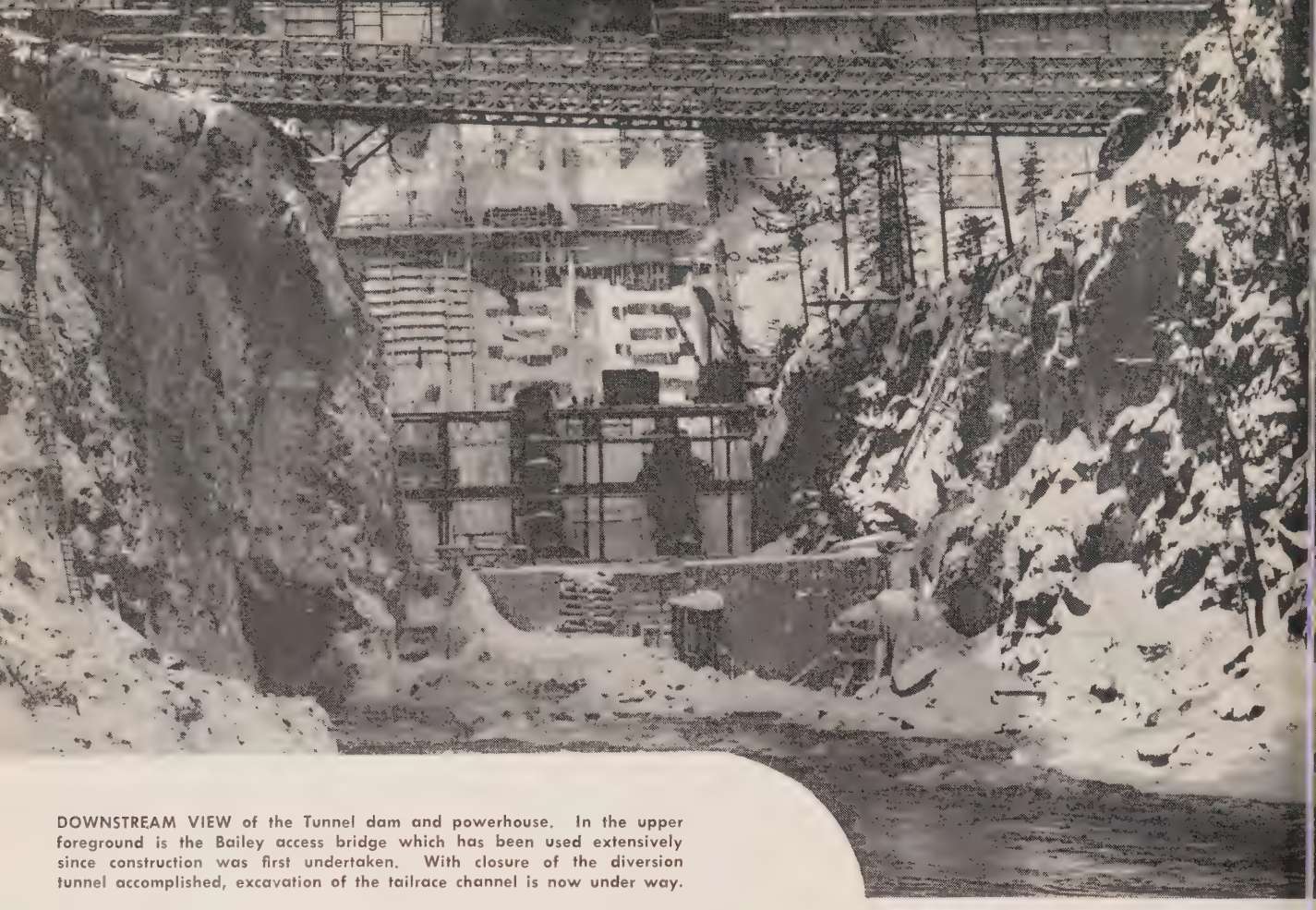
A. L. FARQUHARSON
BROCKVILLE



C. L. McMANN
SARNIA

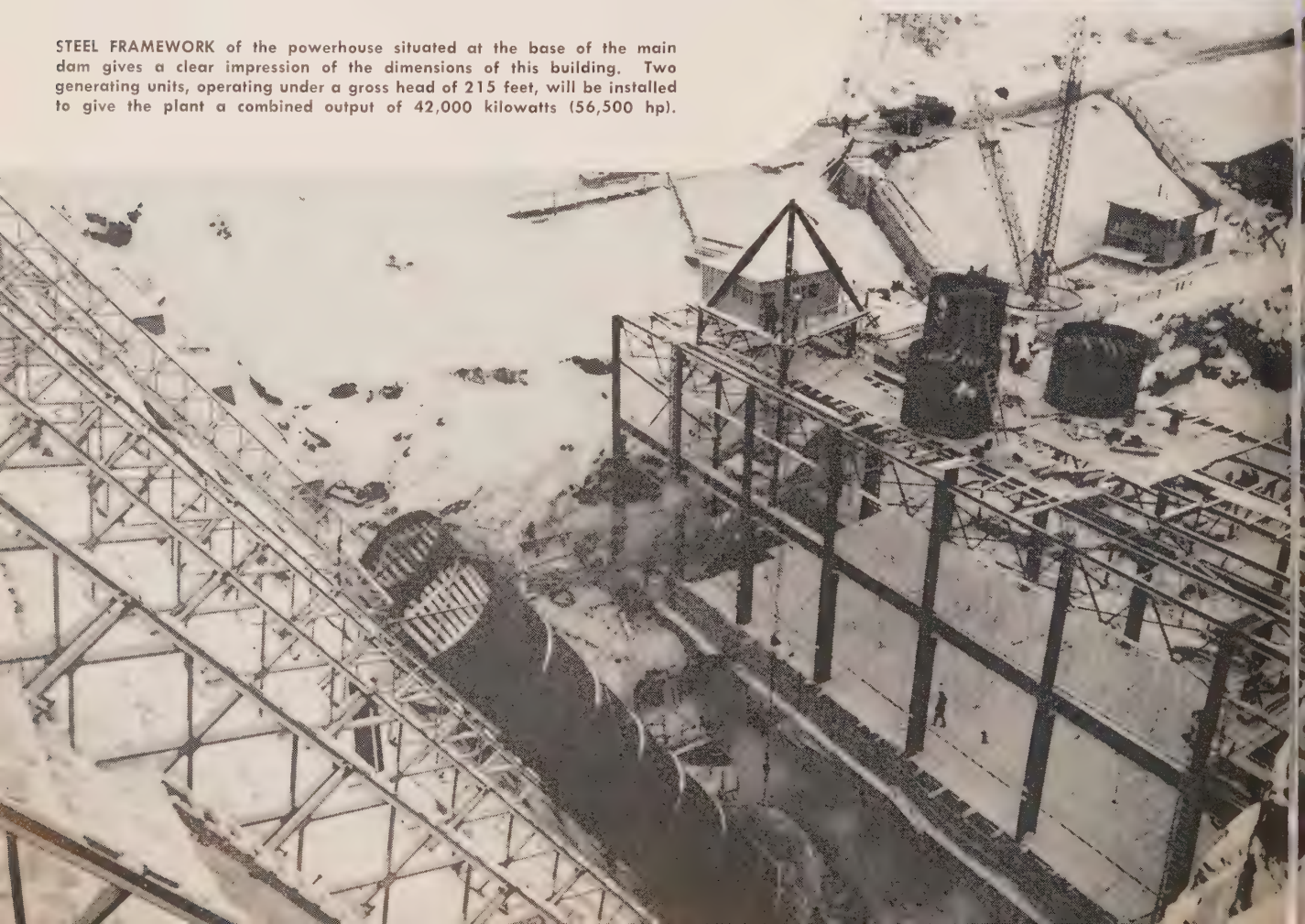


ROY S. KING
MIDLAND



DOWNSTREAM VIEW of the Tunnel dam and powerhouse. In the upper foreground is the Bailey access bridge which has been used extensively since construction was first undertaken. With closure of the diversion tunnel accomplished, excavation of the tailrace channel is now under way.

STEEL FRAMEWORK of the powerhouse situated at the base of the main dam gives a clear impression of the dimensions of this building. Two generating units, operating under a gross head of 215 feet, will be installed to give the plant a combined output of 42,000 kilowatts (56,500 hp).



TUNNEL DEVELOPMENT

(Continued from page 15)

of the forebay. The water will pass through a pilot channel into a creek bed which will, in turn, convey it back to the river, several thousand feet downstream from the powerhouse.

Seven of the sluiceways are equipped with stop logs and the remaining two with steel gates. They are designed to discharge a total of 40,000 cubic feet of water per second.

A concrete, gravity-type side dam — 1,080 feet long with a maximum height of 45 feet — located 100 feet upstream west of the main dam, along with a smaller one still farther upstream, will close low sections of the forebay.

Downstream, with closure of the diversion tunnel accomplished, the excavation of a tailrace is now underway. This channel will be carved from the bed of the river to a depth of 40 feet in some places and will extend downstream from the powerhouse for a distance of approximately 1,800 feet.

Tailrace Excavation

Regarded as one of the more difficult operations entailed in bringing "Tunnel" into operation, excavation of the tailrace will involve removal of about 120,000 tons of rock. Due to the fact that the river flows through a narrow gorge at this point, dumping of the loose stone along the banks of the channel was not feasible. Thus a fleet of sturdy "dumptors" — small, but manoeuvreable, diesel-operated dump trucks — will be employed in hauling away the vast quantities of rock to be blasted from the river bed.

In order to gain access to the deep canyon for the mobile equipment engaged in "Exercise Excavation," a steep road has been gouged in the west wall of the canyon.

While this phase of the job is proceeding, other workmen are engaged in the construction of a log chute to facilitate passage of thousands of logs over the dam. This log chute, a working model of which was built by Hydro engineers in devising a practical design, will be almost 900 feet long.

Line crews have almost completed the construction of 125 miles of 110,000-volt transmission line which will feed 60-cycle power into the 25- and 60-cycle systems of the Northeastern Region through the facilities of the recently-opened Sudbury Frequency Changer and Transformer Station. At this point power from Tunnel Development will be distributed at either frequency as required to the sprawling Sudbury, Nipissing, Timiskaming and Abitibi districts where postwar expansion has created almost insatiable demands for power.

In providing a storage basin for the

(Continued on page 37)



DURING A recent visit of inspection, Chairman Robert H. Saunders had the privilege of pointing out construction progress at Tunnel Development to D. P. Cliff, Dundas, newly-elected President of the O.M.E.A., J. Clark Keith, Windsor, Past President of the A.M.E.U., Robert Butter, Owen Sound, A.M.E.U. President, and George F. Hutcheson, Huntsville, Past President of the Ontario Municipal Electric Association.

STILL GREATER ERA AHEAD

(Continued from page 6)

Aim of Commission

The year 1949, said Hydro's Chairman, could be looked upon as a year of tremendous achievement.

"There was, I can assure you," said the speaker, "one great aim in the minds of each member of our Commission, and in the minds of our General Manager and every member of his staff in the Hydro organization. That aim was to meet the demand for power — to prevent a recurrence of the conditions that existed in the fall of 1948 and to prepare for the future. Let us then look at the activities of your Commission during this momentous year."

At the beginning of 1949, it had been realized that no new generating plant was scheduled to come into service during 1949. It was also realized that an all-out effort would have to be made if cut-offs were to be avoided in the fall and winter of 1949-50.

"Our General Manager and his engineers," said Mr. Saunders, "are to be highly complimented on the tremendous job that they did last year. Their accomplishments can be measured when we realize that on October 31, 1948, our normal operating capacity amounted to 1,440,00 kilowatts (1,930,295 hp) divided among 64 generating stations, of which 56 were Hydro. In addition, our contracts called for the purchase of 712,000 kilowatts (954,700 hp). In other words, Hydro had a total normal operating capacity of 2,152,000 kilowatts (or 2,884,700 hp). At the end of 1949 — that is, on December 31 — Hydro had increased its dependable available capacity through hydraulic generation to 1,445,000 kilowatts (1,937,000 hp) plus steam and diesel capacity of 65,000 kilowatts, or 87,000 horsepower. In addition, Hydro purchased power to the extent of 772,000 kilowatts, or 1,035,000 horsepower, making a total dependable capacity for all systems as of December 31, 1949, of 2,282,000 kilowatts, or 3,059,000 horsepower. That, compared with the 2,881,700 horsepower as at the end of October, 1948, represented an increase of 177,300 horsepower (or 132,300 kilowatts).

"In the face of all our difficulties, I regard this as a real accomplishment, and certainly one that went far in safeguarding Ontario over the past fall and winter seasons."

The Chairman pointed out that Hydro, in addition to bringing in some 61,000 kilowatts, or 82,000 horsepower, of emergency steam electric plants at Toronto, Hamilton, Thorold and Chatham, was also able to arrange for the temporary delivery of an additional 37,000 kilowatts (49,600 hp) from the Canadian Niagara Power Company, and for the withdrawal of the 45,000 kilowatts (60,000 hp) of "firm" export to the Niagara-Lockport

and Ontario Power Companies. These latter two blocks of power were not included in my former comparison of October 31, 1948 with December 31, 1949.

In Southern Ontario, during 1949, the speaker went on to say, Hydro was able to withstand a total cut in the contractual deliveries of purchased power of approximately 14 million kilowatthours per week for several weeks. The Commission was also able, notwithstanding these cuts, to implement the promise made to the retail merchants in September that some relief from lighting restrictions would be provided during the Christmas business period. This relief was given commencing December 15, continuing up to and including December 24, midnight.

Daylight Saving

The Chairman referred to the many enquiries that had been received in connection with daylight saving, pointing out that its extension had actually proved to be of great benefit to Ontario Hydro, because of the confusion that existed. This confusion left many municipalities deciding in favor of, and others against, the continuance of daylight saving. Thus, the peak load was reduced rather than moved in its entirety. This had proved of tremendous benefit.

"This year," Mr. Saunders stated, "it is our belief, that, with the bringing in of Des Joachims' new generating capacity, there will be no necessity for the continuance of daylight saving in any municipality, either from the standpoint of peak load demand or from the standpoint of energy."

Record Power Production

In a spirited passage greeted with tumultuous applause, the Chairman pointed out that while the primary consumer demand for power had reached an all-time high this winter, the production of power had set new records which were little less than astounding.

During one week in February, 1950, 243,267,000 kilowatthours had been generated and purchased. This amount exceeded the kilowatthours generated and purchased in one week during last spring's freshet by 6,711,000 kilowatthours, and permitted the Commission to supply Ontario's customers with 15,548,000 kilowatthours more than during the corresponding week of 1949.

Construction Program

The year 1949 had been a year of tremendous accomplishment also in the field of construction. During that year, Hydro's 22,836 employees not only maintained the construction schedule at Des Joachims but actually improved upon it. The construction staff, numbering some 10,585 employees, with an additional 5,453 men employed by consultants and contractors, had forged ahead in every section of the province. It was a matter of great satisfaction to realize that there were in December last 160 separate and distinct groups ranging in size from 10 to 2,250 men, working, regardless of the weather, on a total of over 442 different projects, ranging in cost from $2,000 to $105,000,000. Last year, total Hydro payroll amounted to $58,772,499, of which $23,326,420 represented salaries and wages paid on construction jobs. The total sum spent last year on construction, including materials, equipment and wages amounted to $141,000,000.

New Power This Year

Mr. Saunders drew attention to the Hydro generation which would be brought into service this year. Three units of the Des Joachims development, totalling 180,000 horsepower, will be in service by July of this year; the remaining five units, totalling 300,000 horsepower and bringing the combined capacity for the eight units up to 480,000 h.p. would be in operation by the end of this year or by January of 1951. The estimated cost was approximately $75,775,000.

It is also expected that this summer would see the Pine Portage development on the Nipigon River in service; and by the end of September the station would be operating at its full initial capacity of 80,000 horsepower. Cost of this development was estimated at $26,400,000.



VETERAN HYDRO official, Albert G. Jennings, Chairman of East York Hydro-Electric Commission, and a prominent figure at O.M.E.A. conventions was honored this year when he was elected an honorary vice-president of the latter organization. Seen reading a copy of Hydro News during the recent annual sessions, Mr. Jennings, is known as the "Father of Hydro in East York," having been a member of that commission since its inception in 1926.

Further, it was expected that the Tunnel Generating Station on the Mississagi River would be in service by June of this year, with a capacity of 56,500 horsepower.

The latter two projects would, the Commission believed, protect the people of Northern Ontario against a power shortage during the coming fall and winter. All other power projects were on schedule and would come into service during the years 1951 and 1952, with a total increased generation between the beginning of 1950 and the end of 1952 of 1,400,000 horsepower.

Rural Construction

In 1948 it was believed that the Commission had reached its peak in rural construction and connections.

"How wrong we were," exclaimed Hydro's Chairman. "In 1949 service was provided for the largest number of new rural consumers connected in any one year. There were 37,594 new consumers added, 2,388 of whom were transferred to municipal systems, leaving a net increase for the year of 35,206 and making a total to October 31, 1949, of 255,295 rural consumers. During the year there were 4,738 miles of primary line constructed as compared with 3,556 miles in the previous year, which brought the total construction to the end of October, 1949, to 32,059 miles."

The rural load, Mr. Saunders noted, was very interesting. Notwithstanding the restrictions in the use of electricity, there was a peak demand of 207,073 kilowatts (270,875 hp) in the rural operating areas. This meant an increase in deliveries of approximately 19 per cent compared with a 15 per cent increase during the previous year.

Over $490,000 A Day

Mr. Saunders then directed attention to the program for 1950. Both the construction and frequency standardization programs would be accelerated this year. Last year $141,749,369 had been expended on construction. This year provision had been made to spend $156,000,000. In addition, $24,000,000 would be spent on Frequency Standardization. In other words, Mr. Saunders pointed out, Hydro would be spending $493,150 a day on construction and Frequency Standardization.

Frequency Standardization

During the first eighteen months of Frequency Standardization Mr. Saunders said, 12,301 consumers had been changed to 60 cycles. The number of consumers of all classes inventoried was 43,190 representing 679,485 connected horsepower. Conversion equipment to the value of approximately $11,794,000 had already been ordered, and the value of stock in Hydro warehouses was $5,476,892.

It is anticipated, the Chairman added, that the average purchases of conversion

materials and plant would be from $5,000,000 to $7,000,000 per annum. To the end of December, 1949, some 95,200 consumers had been surveyed and approximately 89,421 of these surveys had been tabulated and released to the contractor. The inventory as of January 27, 1950, shows that there were approximately 679,485 connected horsepower covering 36,484 domestic, 5,225 commercial and 1,481 power consumers. The number of consumers whose premises it was anticipated would be converted to the end of October of this year, was as follows: Domestic, 73,015; commercial, 6,576 and power 1,084 — totalling 80,675.

Hydro's Chairman quoted figures to show that the use of electrical appliances in Ontario homes compared more than favorably with their employment in other parts of the continent, and tended to support the statement that the standard of living in Ontario is high."

It was anticipated that some 800,000 meters would have to be processed during the frequency standardization period and plans had been made for Hydro's Meter Department to process some 80,000 meters per year until the end of operations. As an illustration of the benefit of research, Mr. Saunders pointed out, that a method of converting meters has been developed and approval given thereto by the Standards Division of the Department of Trade and Commerce. The Commission was hopeful that, by this means, some $2,000,000 of cost might be saved by the municipalities in the 25 cycle area. Originally, it was estimated that the cost of standardizing meters would be $10.00 per meter but the speaker was pleased to say that this had now been reduced to $5.00 per meter.

Hydro Purchasing

Coming to the subject of Hydro purchasing, the Chairman pointed out that the bulk of the money was expended in Ontario. During 1949, Hydro had purchased materials and equipment to a total of approximately $100,000,000. Of this amount, $86,800,000 was spent in Canada and some $81,250,000 in Ontario alone. Approximately $8,750,000 was spent in the United Kingdom, and $4,500,000 was spent in the United States.

Increases In Rates

Discussing the position of the Commission with respect to increase in power rates, the Chairman had this to say: "I would remind you firstly that our Commission did not prophesy as to the percentage of increase. Let me quote the actual words used: 'the increase to municipalities in the wholesale rate (based on the actual cost of power) will take the following forms:— (a) Refunds to municipalities for 1949 will be reduced an average of $1.25 per horsepower in the Southern Ontario System, and $1.30 in the Thunder Bay System. (b) As from November 1, 1949, interim rates will be increased on the average approximately $2.25 per horsepower in Southern Ontario, and $3.00 in the Thunder Bay System.'

"Under the Commission proposal the new rate to the municipality for 1950 was estimated at $24.83 on the average which is approximately equal to that in effect in 1937 for the Southern Ontario System and in 1934 for the Thunder Bay System."

The Chairman quoted Dominion Government statistics showing that the value of the dollar was only 62 cents in 1949 as compared with $1.00 in 1936. Wages and the cost of material and equipment had increased to such an extent that an increase in rates had been judged necessary to preserve the financial stability of the Commission.

WITH HYDRO 36 YEARS

W. Edgar Wallace of Windsor Retires Active Community Worker

Announcement has been made of the retirement of W. Edgar Wallace, office manager of the Windsor Utilities Commission (Hydro Division), after 36 years of service in that capacity.

One of a triumvirate of Hydro pioneers in that area, Mr. Wallace became associated with Hydro at its inception in Windsor. Prior to joining Hydro, he had held a position with the Madoc Construction Company, which he joined after graduation from the Ontario Business College at Belleville.

Throughout the years of Hydro's growth in the Windsor area, Mr. Wallace was one of the guiding hands. He also became firmly established in community service work, including boys' work, to which he has given freely and generously of his time and efforts during the past 30 years.

He is District Commissioner of the Boy Scouts, in which he takes a keen interest, and a member of the Rotary Club. He plans to devote much of his time to these organizations, as well as enjoying his retirement at his summer home in Haliburton.

During a recent testimonial dinner, attended by more than 200 employees of the Windsor Utilities Commission, Mr. Wallace and Frederick D. Hubbell, superintendent of outside staff who has also retired, were presented with silver tea services. In short addresses, the two retiring employees recalled that they had joined the Windsor Commission on February 16, 1914. At that time, they, together with the late Oliver M. Perry, formed the entire staff of the Windsor Hydro division.



W. Edgar Wallace.

HELP THE CRIPPLED CHILDREN



DO you know that there are 12,000 needy crippled children in Ontario? In this connection it is interesting to note that the Ontario Society for Crippled Children is reported to be the only organization in the province devoted entirely to the discovery and care of these children. This summer, through the good offices of the Society, which has 27 years' continuous service in this field of public service to its credit, 500 Ontario crippled children will have a three week holiday at specially equipped camps.

You can help in this valuable work on behalf of crippled children by purchasing Easter Seals which are being mailed out by 150 service clubs throughout the province.

Nature's "Helpful Co-operation"

Power Supply Conditions During Fall and Winter Better Than Anticipated, M. J. McHenry Tells District No. 8, O.M.E.A.

POWER supply conditions, particularly in Southern Ontario, during the fall and winter months, were better than originally anticipated, largely because of "a fairly open winter."

In mentioning this fact when addressing delegates to District No. 8 O.M.E.A. meeting at Chatham on February 10, M. J. McHenry, the Director of the Commission's Consumer Service Division, said there was good reason to be thankful for "the timely and helpful co-operation of Nature."

The worst, he said, appeared to be over and with new power plants coming into service this year, all indications pointed to cut-offs being a thing of the past. At the same time, Mr. McHenry cautioned his listeners that many uncontrollable factors affected power supply conditions and that it was, therefore, difficult to look too far ahead.

When discussing new sources of power, the speaker directed attention to the largest of Hydro's postwar developments — Des Joachims on the Ottawa River. That plant, he stated, would come into service this summer and within a year would be contributing 358,000 kilowatts, or 480,000 horsepower, to the Commission's resources.

Mr. McHenry next reminded his audience of the tremendous increases in the cost of both labor and materials and emphasized the significance of these increases in relation to Hydro's $582 million postwar construction program. The greatly increased carrying charges on new capital investment were bound to affect the cost of power, continued Mr. McHenry. Municipalities, he pointed out, were not affected by the immediate cost of labor and materials but by the cumulative effect of the tremendous expansion program over the past several years.

Turning to the rural picture, Mr. McHenry said that in 1949, service had been provided for the largest number of new rural consumers ever connected in any one year. In all 37,594 new consumers had been added, 2,388 of whom were transferred to municipal systems, leaving a net increase for the year of 35,206. This meant that as of October 31, 1949, Hydro was serving a total of 255,295 rural consumers.

During 1949, he continued, Hydro built 4,738 miles of new rural line as compared with 3,556 in 1948. Total line construction up to October 31, 1949, he said, was 32,059 miles.

He next referred to the progress of Hydro's Frequency Standardization Program which, he said, was moving along pretty well on schedule and was building up into what might be called "normal annual production."

This year, proceeded Mr. McHenry, it was anticipated that attention would be given to the improvement of existing rural systems. So far as rural rates were concerned, he expressed the opinion that they would have to be reviewed in the light of the greatly increased costs the Commission had had to meet in recent years.

Officers elected for the ensuing year are as follows: Chairman, W. P. Bolton, Windsor; Vice-Chairman, E. C. Morand, Tecumseh; Directors: D. P. Herring, Sarnia; G. H. Fuller, Windsor; M. E. McDonald, Amherstburg.



O.M.E.A. OFFICERS elected for the ensuing year at the annual meeting of District No. 8 held at Chatham on February 10 are, front row, left to right: J. Clark Keith, Secretary, Windsor; W. P. Bolton, Chairman for the District, Windsor; E. C. Morand, Tecumseh; Back row, left to right: G. H. Fuller, Windsor; D. P. Herring, Sarnia, M. E. McDonald, Amherstburg.



M. J. McHENRY (centre), H.E.P.C. Director of Consumer Service Division, points out the salient features of a Speed Graphic to W. P. Bolton (left) Chairman of O.M.E.A. District No. 8, and J. Clark Keith of Windsor.



WELL KNOWN in O.M.E.A. circles, Fred Biette (left) recently retired after serving continuously over 23 years on the Chatham Commission, talks things over with G. H. Fuller of Windsor and D. D. McKenzie of Riverside.

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NO DOUBT some good yarns were told at this pre-luncheon session with George Currie (left) Western Region; S. Thomson of Chatham; R. S. "Smoky" Reynolds, Manager, Chatham P.U.C., and R. M. Laurie, Western Region.





REGISTERING IN is T. C. Scott of Tecumseh, with J. T. Barnes, Sarnia and E. C. Morand, with cigar, of Tecumseh, looking on; G. L. Sharpe of Chatham, is standing in the doorway and Bud Gonyou is taking in the money.



TELEPHONE ADJUSTERS of the Consumer Relations Department, of the Frequency Standardization Division, are shown above in action in the new area office located in East York.

Scarborough Change-Over Completed



DEPARTMENT HEADS confer with Area Project Manager C. E. Whitaker (seated). Left to right, G. P. Rich, Information Officer; F. J. Barrett, Field Planning Engineer; Mr. Whitaker, and C. A. Wakeham, Area Engineer.

Appliances And Equipment Of 10,924 Hydro Consumers Converted

APPROXIMATELY five months after the start of actual work, Scarborough Township can now claim the distinction of being the first community in Ontario to have been completely changed over from 25- to 60-cycle power.

In announcing completion of the Commission's Frequency Standardization operations in Scarborough recently, Chairman Robert H. Saunders paid tribute to the local Hydro and municipal authorities and to citizens of Scarborough for their "fine team play" and co-operation with Hydro's Frequency Standardization crews.

While covering only one community, statistics relating to Frequency Standardi-

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zation operations in Scarborough indicate the magnitude of this great Hydro project.

Some 10,924 Hydro consumers of all classes in Scarborough had their 25-cycle electrical appliances and equipment converted for 60-cycle operation. That total included 10,198 domestic, 636 commercial and 90 industrial consumers, representing an estimated connected load of 11,900 kilowatts. During the entire operation, there were 35 separate cut-overs.

The number of appliances and pieces of electrical equipment converted for 60 cycle operation totalled 42,239. Approximately 81 per cent of the people in that community own electric washing machines, 42 per cent radio phonographs, 57 per cent electric clocks, 39 per cent refrigerators and 28 per cent electric heating devices.

Among the ninety industries changed over in that district were The National Research Council, Canadian Line Materials, the Scarborough Water Works, a couple of brick yards, several metal products, chemical, and other plants — each a major standardization operation in itself.

On March 13, standardization operations moved into the Markham district, to the northeast of Toronto, thus gradually pushing back the boundaries of Southern Ontario's "25-cycle island."

Area Office

Both the Scarborough and Markham districts are being served by Hydro's Frequency Standardization area office located at 1483 Woodbine Avenue in East York. Present plans call for the organization of an office for each of the 23 standardization areas in Southern Ontario, as the changeover begins in the area. Three such offices are now in existence — in East York, Sarnia and London.

Head man in each office is the area project manager who fills the triple role of office manager, field coordinator, and liasion officer between the area and other groups, including the regional office, the contractors, the municipalities and the rural operating office.

Other personnel in the offices include a field planning engineer and his staff, negotiators, a consumer relations department headed by the area information officer, and an area claims officer. For each area there is also an exchange depot for clocks and fans.

Some 35 or 40 persons constitute the Markham-Scarborough office, which is housed in the top half of the newly erected brick building at the corner of Woodbine and O'Connor Drive. The office itself is an airy, cheerful place, well lighted with fluorescent lamps and decorated in a pleasing shade of green.

Project Manager for this area is C. E. Whitaker. Heads of the various departments for the area include G. P. Rich, Information Officer, F. J. Barrett, Field

(Continued on next page)



"A PRESENT for me?" Bob Wolfe, chief telephone adjuster at the F.S.D's Area office, smiles in anticipation as Janice Humphries hands him silver-wrapped cake. Gift was sent by Mrs. F. E. Humphries in appreciation of his courtesy during conversion.

"A LITTLE BREAD . . ."

For Services Rendered

For an example of "a little bread cast upon the waters" take the case of Robert R. (Bob) Wolfe, chief telephone adjuster at an area office of Hydro's Frequency Standardization Division.

A few days before Christmas, Bob, whose office looks after consumer relations in the Scarborough area, received a call from Mrs. F. E. Humphries, of 8 East Road in Scarborough. Conversion of her electric stove had not yet been completed, and Mrs. Humphries was beginning to worry whether or not she'd be able to cook Christmas dinner.

Not wishing to see anyone go hungry at Christmas, Bob undertook to see that the job was done in time. He was successful in speeding up operations, with the result that the stove was ready for use just before the big day.

The aftermath came a few weeks later, when Bob was visited in his office by Mrs. Humphries' daughter, Janice. Expressing her mother's gratitude for his efforts, she presented him with a piece of Chistmas cake, gaily wrapped in silver paper and ribbon.

Commented Bob: "My favourite kind of cake!"

CHANGE-OVER COMPLETED

(Continued from previous page)

Planning Engineer, and C. A. Wakeham, Area Engineer.

Sarnia Changeover

On the western extremity of the present 25-cycle system, a second front was opened last January when change-over operations were started at Corunna, downriver from the city of Sarnia. Meanwhile a start has been made in Sarnia itself, with 62 Hydro consumers in the city receiving their initial deliveries of 60-cycle power on March 15. The inaugural "cut-over" took place in the eastern section of the city.

Sarnia is the first city in Ontario's "25-cycle island" on the Frequency Standardization schedule. The reason for this is that it has a direct source of 60-cycle power from the generators installed at the Polymer Corporation by the Commission to utilize supplies of surplus steam.

Throughout the province the various areas have been allocated their standardization dates on the basis of when they can be supplied with 60-cycle power.

There are approximately 7,000 Hydro consumers in Sarnia proper, representing a connected load of over 21,000 horsepower. It is estimated that the 6,200 domestic consumers in the city own about 20,000 frequency-sensitive items that must be converted.

Headquarters for the Standardization in the Sarnia district is the Area Office at 155 Wellington Street. Any inquiries pertaining to the change-over are being directed to the Area Office rather than to the office of the Sarnia Hydro-Electric System or the Canadian Comstock Company. Continuous phone service is being provided to take care of these matters, and a specially trained staff is on duty day and night.

RE-ELECTED AT BRAMPTON

W. J. ABELL, Chairman of the Brampton Hydro-Electric Commission since 1947, was recently re-elected by acclamation for a two-year term.

Mr. Abell has had a long career both in Brampton Hydro and in municipal life. He was active in local affairs from 1932 to 1938, when he retired from Town Council. As Mayor for the 1937-38 term, he also served on the Brampton Hydro Commission, of which he has been a member continuously since 1943. Among his many other interests is the Chairmanship of the Brampton Memorial Arena Board.

Other members of the Brampton Commission for the coming year are William P. Dale, a Commissioner since 1947, who represents Brampton in District No. 4, O.M.E.A., and Mayor H. R. Lawrence.



OFFICIALLY LAUNCHED last October, Hydro's tremendous $200,000,000 frequency standardization program will result in the 25-cycle areas of Southern Ontario being changed over to a 60-cycle frequency in the course of the next ten to twelve years. Engineering and economic factors alone determine the order in which municipalities are to be changed over. The present schedule is indicated on the accompanying map which has been divided into areas, marked A, B, C, etc. Beside each letter, which identifies a given area, are figures indicating the year, or years, during which, it is expected, that the areas will be changed over from 25- to 60-cycle. For example, area A, which includes Sutton, Newmarket, Bolton, Aurora, Stouffville, Agincourt, East York and Scarborough Twp., is being changed over during 1949-50, area B in 1950, C and D in 1950-51, and so on.

"NEVER-ENDING JOB"

Special Role Of Junior Management In Accident Prevention Stressed by E. E. Sparrow In Address To A.M.E.U. Delegates

IT is up to management, and in particular junior management, to keep the idea of accident prevention constantly before employees.

This point was strongly emphasized by E. E. Sparrow, Chairman of the Workmen's Compensation Board of Ontario, when addressing delegates to the recent A.M.E.U. convention in Toronto.

"Our organization is unique, in that what we are interested in is less business than we are getting," said Mr. Sparrow, who urged his listeners to keep selling the idea of accident prevention which he described as "a never-ending job."

He pointed out that it was in the interests of employers as well as employees to help decrease industrial accidents. In 1949, he said, benefits totalling some $25,000,000 were paid to workers injured in approximately 180,000 accidents. In addition to the financial burden thus laid upon the employers, these accidents also incurred loss of working time and a consequent decrease in production.

Although the rate of compensation had increased, as of January 1, 1950, from 66⅔ per cent to 75 per cent of a man's earnings, with a corresponding increase in costs, the Board was trying to keep down the rate of assessment for employers, he stated. The best way of doing that, continued the speaker, was to cut down on the number of accidents. In addition, employers could help increase the efficiency of the Board by reporting accidents promptly, thus facilitating payment of compensation.

Speaking of the Board itself, Mr. Sparrow said it was regarded as one of the most efficient of its kind in the world. Its Convalescent Centre at Malton enjoyed a high reputation, and had been visited by doctors from many other countries, including the United States, Britain and Porto Rico.

After having undergone any necessary surgery, injured workmen were admitted to the Malton Centre where they were trained to use their injured muscles, and, finally, they were returned either to their previous work or to similar occupations. The object of the Centre was to fit such men for active, profitable labor as soon as they were fully recovered from their accident, Mr. Sparrow explained. As such, declared the speaker, the Centre was not an expense, but an investment.

At the present time, he went on, there were about 400 patients at the Centre, half of them bed-patients. Average weekly turnover during 1949 was about 60 men, while the staff numbered approximately 150.



POPULAR SECRETARY-Treasurer of the O.M.E.A. for the past decade or more, Mrs. Kay Kestell, of Guelph, has tendered her resignation which has been accepted with regret. During the recent annual convention, a Hydro News photographer, recorded this photograph of "Kay," who served as secretary to the late T. J. Hannigan, Secretary-Treasurer of O.M.E.A. from 1914 until his death in 1940. Married in January, 1946, Mrs. Kestell is the proud mother of a year-old daughter.

Manson Will Receive Coveted Fuller Award

Manager Of Stratford P.U.C. To Be Honored By American Water Works Association

WHEN A. B. Manson, General Manager of Stratford Public Utility Commission, goes to Philadelphia in May, he will be the recipient of the coveted Fuller Award of the American Water Works Association. The presentation, which will be made at the Association's convention, is in recognition of outstanding service in the water works field.

Mr. Manson was born in West Zorro Township, Oxford County, and attended Stratford Collegiate. In 1910 he graduated as a civil engineer from the University of Toronto. For the next two years he was employed with the Mond Nickel Company, Sudbury, and later as resident engineer for the Canadian National Railways on their Montreal-Port Arthur line. His Hydro career began in 1912, when he joined Stratford Public Utility Commission as City Engineer. In 1928 he became General Manager of the Stratford Commission — a post he has held ever since.

The Fuller Award is named after the late George Warren Fuller, long recognized as one of the leading water works engineers who practised in the United States. Accompanying the award is a citation which states that it is given for efficient service in the management of a water works system, for long and highly valued aid to the Canadian Section of the American Water Works Association, and for exemplary co-operation with, and assistance to, others in the water works field. Presented annually, the Fuller Award went to J. Clark Keith of Windsor, in 1949 and to E. V. Buchanan of London in 1948.

Mr. Manson was Chairman of the Canadian Section in 1938, and Canadian Director of the Association in 1946-7-8. A member of the Engineering Institute of Canada, and a Past President of the Association of Municipal Electrical Utilities, Mr. Manson's time would seem to be taken up with his many duties in the field of public utilities. However, he still finds time to indulge in his favorite sport — lawn bowling.

COMPLETE FIRST PHASE

Completion of a new street lighting system on the west side of Galt was announced recently by P.U.C. Manager J. E. Teckoe, Jr. This program is part of a five-year plan requested by the city council and is now in its third year. During the next two years, new lights will be installed in the northern and eastern sections of the city.



O.M.E.A. EXECUTIVE for 1950, elected at recent joint convention in Toronto. Back row, left to right, W. E. Theaker, Paisley; J. R. Pattison, Fort William; James Harris, Kingston; D. P. Herring, Sarnia; Dr. M. P. Benger, Port Arthur; J. W. Monteith, Stratford; A. G. Jennings, East York; K. C. McLeod, Stamford Township; Roy Pierson, Brantford Township; Walter Dickson, Arthur. Front row, G. F. Hutcheson, Huntsville, retiring President; D. P. Cliff, Dundas, President; F. H. Plant, Ottawa. Among those who were absent when photo was taken are R. W. D. Lewis, London; H. R. Henderson, Woodstock; W. P. Bolton, Sarnia; A. O. Leslie, Scarboro.

St. Lawrence "Waste" Deplored

O.M.E.A. President Draws Attention To Undeveloped Potential—Must Provide For Future Consumer Demands, He Warns



"IT seems a shame that, year by year, more than 2,000,000 horsepower should be running to waste on the St. Lawrence River when people on both sides of the international border are definitely in need of additional power."

This observation was made by George F. Hutcheson, President of the Ontario Municipal Electric Association in his address to the delegates at the recent convention.

Canada and the Province of Ontario, Mr. Hutcheson continued, were witnessing only the beginning of a tremendous development of natural resources. The waterpower resources of the Dominion, he pointed out, were estimated at between 40,000,000 and 52,000,000 horsepower. Of this tremendous potential only some 10,700,000 horsepower had been developed up to date. Nearly half of the new waterpower development programs now being carried out in Canada were being undertaken by The Hydro-Electric Power Commission of Ontario. It would, however, take all of the new power now being harnessed to meet the demand.

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PRESENTING PAINTING to retiring O.M.E.A. President G. F. Hutcheson is K. C. McLeod, Stamford Twp., as R. M. Durnford looks on.

And it would not be long, at the present rate of increase, the O.M.E.A. President emphasized, before new consumer demands again passed production capacity.

Mr. Hutcheson referred to the death during the year of three past presidents of the O.M.E.A. These were Dr. W. J. Chapman of St. Catharines and T. L. Church and C. A. Maguire of Toronto. The delegates stood for one minute in silence as a tribute to the memory of these distinguished public servants.

Electric Service League

A report on the work of the Electric Service League of Ontario with which the Hydro municipalities are intimately associated was presented by Bert Merson of the Toronto Hydro-Electric Commission. Mr. Merson stated that a good deal had been accomplished by the League in 1949 and still greater activities were anticipated in 1950. He pointed out that during 1946, the year in which the Ontario League was established, only 602 new houses were wired according to Red Seal requirements. In 1949 no less than 2,151 new homes were adequately wired.

"What we need to give our program a real impetus," declared Mr. Merson, "is the active support of local Hydro commissions. Any assistance that the new regional officers of The Hydro-Electric Power Commission of Ontario can give us will also be appreciated."

There were now, Mr. Merson stated, 190 municipalities associated with the League as compared with 20 at the outset. He appealed for an even greater support through membership of the important "Red Seal" program.

Congratulating the H.E.P.C. on the manner in which its Frequency Standardization program was being carried out, A. G. Jennings, Chairman of the East York Hydro-Electric Commission, stated that in his area 13 industrial plants — most of them from the Old Country — were using the new 60-cycle power and 16 more industries had signed up for standardization. Some 1,470 domestic consumers had been changed over with little inconvenience.

Mayor W. R. Tomlinson of Port Elgin expressed the opinion that the people who wanted 60-cycle power were the industrialists who desired to group themselves about the big centres. He hoped that the smaller places would be given a little better Hydro rate so that they, too, could attract industries.

Stick To Georgian Bay

President Hutcheson told the delegates that the proposal to form a new "Number 9" O.M.E.A. district, broached at the previous annual meeting, had fallen through for the time being. The areas involved had expressed a preference for remaining in the Georgian Bay district.

The report of the Financial Committee, presented by C. J. Halliday of Chesley, showed that receipts for the year amounted to $5,350, while total disbursements had amounted to $5,062.60.

Hydro Displays Attract Attention



CONVENTION DELEGATES register absorbed interest in Des Joachims model as Gowan Guest, H.E.P.C., points out features of powerhouse and switching structure.



THIS GROUP is shown while examining a large map of Ontario, showing the Commission's generating stations and main transmission lines on display at the convention.



JOHN DARLING (centre), son of Reeve Stan Darling, Burks Falls, turns switch for official cut-over of that municipality to Hydro power. Others attending the ceremony to welcome Burks Falls into the Hydro family were George F. Hutcheson, Past President of the O.M.E.A.; Chairman Robert H. Saunders, Peter Darling and Reeve Darling, newly-appointed Chairman of the Burks Falls Public Utilities Commission.

Joins "Hydro Family"



HYDRO CREWS are improving service to Burks Falls consumers, rehabilitating the municipal distribution system. Here two men are shown at work on a new pole.

Official Ceremony Marks Cutover To Hydro Power — Burks Falls Citizens Mark Important Event

★

BURKS FALLS is now a member of the "Hydro family."

In a recent ceremony marking the official cutover to Hydro power, Chairman Robert H. Saunders welcomed the community into the "family," pointing out that there are now well over a thousand municipalities in Ontario served by the Commission. Burks Falls is one of 310 municipalities which obtain power from the Commission on a cost basis.

Under the new arrangement, the village receives 150 to 200 horsepower of electricity transmitted over a 12,000-volt line from Emsdale Transformer Station, eight miles distant.

Distribution of the power is carried on by the village itself, which recently purchased the distribution system from the Knight Brothers Lumber Company. Some 320 domestic, commercial, power and rural consumers are served by this system, which is being rehabilitated by Hydro line crews to improve service to the consumers.

Prior to the official cutover, which took place at the municipal post office, a number of films were shown to Burks Falls school children, who then paraded to the post office for the ceremony. Actual switch-turning was done by John Darling, son of Reeve Stan Darling, newly-appointed Chairman of the Burks Falls Public Utilities Commission.

Other members of the commission are M. E. Doherty and A. E. Thompson.

Later, Mr. Saunders and members of his party attended the regular meeting of the Burks Falls Lions Club, where the Chairman again expressed the pleasure of the H.E.P.C. in extending service to the community. He mentioned the fact that power from the Hydro developments now under construction would make a great contribution to the resources of the Commission, and pointed out that "Hydro has never refused service to any prospective consumer. No other large organization can say that."

Officials attending the ceremony included Geo. F. Hutcheson, Past President of the Ontario Municipal Electric Association; C. E. Crease, Consumer Service Engineer, Georgian Bay Region; Ronald Pile, engineer in charge of the $35,000 cutover installation; D. G. Ferguson, Manager, Georgian Bay Region; Reeve Dalton Caswell of Sundridge; George W. Deegan, Chairman, North Bay Hydro-Electric Commission.

RESEARCH DEMONSTRATION

J. H. Waghorne, Senior Research Engineer Among Speakers at A.M.E.U. Convention

★

DEMONSTRATING the uses of five devices developed or perfected in the Commission's Laboratory, J. H. Waghorne, Senior Research Engineer, H.E.-P.C., gave A.M.E.U. delegates during their recent Toronto convention, a vivid picture of some of the work carried on by Hydro's Research Division.

Aided by Carman Metcalfe, Mr. Waghorne described, and showed in action the strain gauge, the bolometer, the klydonograph, magnetic links, and a surge generator.

The first device demonstrated was employed to measure strain on wood, steel, concrete, or other materials used by the Commission, Mr. Waghorne stated. The bolometer, developed from a wartime radar device, detected and located overheated transmission line joints by means of infra-red rays given off by the joints, he continued.

The three final developments described, dealt with the generation and measurement of lightning, enabling research workers to gather information useful in protecting the Commission's switching structures and transmission lines. The klydonograph measured the magnitude of voltage in a lightning flash, by means of extremely high-speed photography. Magnetic links were developed by the General Electric Company but were now used extensively by the Research Staff to measure lightning currents, it was pointed out.

As natural lightning flashes were not dependable enough, either in size or frequency, for practical study, the lab generated its own lightning by means of a surge generator, he said. A miniature of this device was also demonstrated by the speaker.

By special request, Mr. Waghorne consented to speak on these topics in place of his scheduled address on "Grounding."

Poster Contest At Woodbridge Produces Results



POSTER CONTEST held recently in Woodbridge Public School produced many effective placards. First prize winners are, left to right, Lorna Helliwell, Bonnie Anderson, Valerie Wakeland, Helen Walton, Elvira Gailitis, Wayne Colton, Doreen Longhouse, Bill Gailitis. Inset: Hydro Savings Club officers: Fred Clements, vice-pres.; Gertude Aitchison, secretary; George Scott, president.

CSA PROTECTION

Standards Represent Vital Economic Need, Col. W. R. McCaffrey Declares When Addressing A.M.E.U. Gathering

"CITIZENS of Canada, generally, wherever electrical services are provided, are protected in the use of electrical equipment and appliances through the efforts of the Canadian Standards Association."

So declared Col. W. R. McCaffrey, General Manager of the Canadian Standards Association, speaking at the annual meeting of the Association of Municipal Electrical Utilities, on March 1, at the Royal York Hotel.

Continuing, the speaker pointed out that Canada, in the past, had been a fruitful country for the dumping of substandard electrical equipment, but, largely through the efforts of provincial inspection authorities, and based on CSA requirements, this practice had been practically eliminated. Today, he declared, foreign as well as Canadian manufacturers were required by provincial and municipal legislation to produce their equipment, for sale or installation in Canada, on the basis of recognized electrical codes. And the citizens of Canada were beginning to ask at the time of purchasing new appliances for evidence of CSA approval, in the form of an appropriate CSA label or the CSA approval number or authorized monogram on the manufacturer's nameplate.

Safety Is Objective

Defining the term "standards," the speaker said that it meant accurately defined processes, sizes, qualities, and tests of materials and equipment that have been generally agreed upon by makers, users and the public, as proper and desirable for general use. A standard may be in the form of a specification for quality and performance or it may be a code of practice with "safety" as its objective.

Standards, he said, represented a vital economic need, and have a beneficial effect on the national economy. The advantages of standardization have been recognized by some of the Canadian industrialists for many years, and the CSA has found many staunch supporters of the Standardization movement within Canadian industry. The economic problems that developed during periods of war have been found to be a great incentive toward development of national standards.

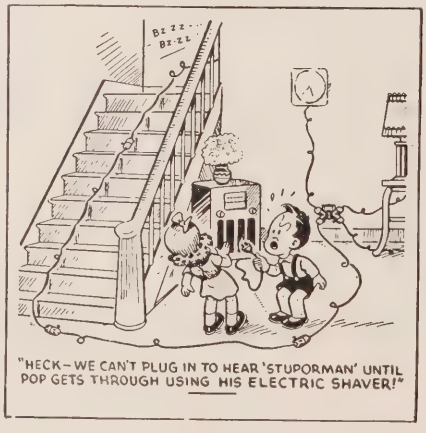
Tracing the history of standardization, Col. McCaffrey revealed that in 1861 the records of the British Association indicated that a committee of six eminent scientists established fundamental electrical standards on an international basis. Discarding empirical solutions, they developed a system of electrical units that linked up directly with a recognized unit of work, thereby establishing the connecting link between all physical measurements. The fact that their decisions in regard to the establishing of these standards have stood the test of time, indicated the thoroughness of their investigations, and the wisdom of their decisions.

At the turn of the 20th Century, the speaker said, the movement toward national standardization commenced, and the British Standards Institution was possibly the first national body to be set up for this purpose, in 1901. The Canadian Standards Association was incorporated in 1919, as a non-profit, non-governmental association, under the Dominion Companies Act. Its function was that of establishing industrial standards and codes of practice, and with an equal responsibility toward the views and needs of producer and consumer interests.

Considerable Confusion Existed

In 1919, Col. McCaffrey related, when the Canadian Engineering Standards Association was incorporated, nine different provincial regulations for electrical installations were virtually in effect in Canada. There was considerable confusion as to "how to make what for where." In that year, diversity of inspection procedure and of basic regulations governing sale and installation of electrical equipment in various provinces of Canada caused a protest to be lodged in Canada by British manufacturers of electrical equipment. They claimed that some items that were acceptable in Great Britain were acceptable also in some parts of Canada, but not in others. Canadian manufacturers also complained about the differences in electrical inspection regulations in different parts of Canada.

Consequently, said the speaker, one of the first projects to be tackled by the Canadian Standards Association was the developing of a national code of practice in the wiring of buildings and installation of electrical equipment, at the request of diversified interests in Canada and manufacturers abroad. The names of Professor Burr, W. P. Dobson, F. A. Cambridge, F. A. Gaby, A. B. Lambe and R. J. Durley have been familiar to many.





COL. W. R. McCAFFREY
General Manager
Canadian Standards Association

These constituted the first special committee of the CESA that was charged with the responsibility of organizing the project.

Only those who took part in the development of the Canadian Electrical Code, the speaker said, know the intensity of the struggle that was experienced in bringing it to the point of general acceptance in Canada. It meant a real effort on the part of those who labored so conscientiously and faithfully to complete their assignment.

Col. McCaffrey paid tribute to Hydro's Director of Research, W. P. Dobson, and said that the directing and motivating force in the pioneer work of producing the Canadian Electrical Code as well as in its maintenance, up to the present time, was Mr. Dobson, whose knowledge and experience in the electrical field in Canada and his many contacts abroad, had singled him out as the logical director of this important CSA work.

Enviable Position

This Code, the speaker declared, enjoyed an enviable position of acceptance throughout Canada. It is believed to be the only code that has been produced by voluntary effort, as recommended good practice, that has won a position of universal acceptance, implemented by force of law in any nation in the world. It has been the subject of favorable comment in the British Commonwealth and foreign nations, including the United States. The code is now in its fifth edition and arrangements are being made for a general review in the preparation of the 6th edition.

Col. McCaffrey maintained that in the Canadian Electrical Code the CSA has rendered an outstanding service to the electrical utilities of Canada, and added: "the process of its maintenance is a continuous, unending operation."

BRUSH CONTROL

J. W. Suggitt, Hydro Chemical Research Engineer, Describes Commission Experiments

BEST control of most brush species was obtained by application of a mixture of 2,4-D and 2,4,5-T at about 3,000 parts per million. This fact was revealed by J. W. Suggitt, Chemical Section of the Commission's Research Division, during delivery of a paper at the recent A.M.E.U. Convention in Toronto.

Speaking on "The Chemical Control of Woody Growth," Mr. Suggitt described the results obtained from experiments conducted by the Commission during the last two years.

Spraying with the combination prescribed above, the speaker said, would control most species of brush with one application, though when dealing with more hardy types of growth, such as hickory, oak, or maple, a second treatment might be necessary.

While spraying with the herbicide would control most species of brush, declared Mr. Suggitt, research engineers had found that it was expedient to first cut down trees over eight feet tall and then spray the regrowth when it appeared.

The commission had been interested in chemical herbicides of various types for the past twenty years; but most earlier materials gave unsatisfactory results, the speaker maintained. More intensive experiments were carried on in 1948 and 1949, and experimental plots were set up in three areas in Ontario for the purpose of testing the various chemicals. The plots, each one-fiftieth of an acre in size, were located in the Niagara Region, near Barrie and near Peterborough. They were permanent, and would continue to be used for experiments with brush control, he pointed out.

Much experimentation had yet to be done, declared Mr. Suggitt. "The best chemicals, or combination of growth regulators, the optimum and most economical concentrations, all are problems as yet in doubt," he said. Experiments would also be carried out in connection with spraying during the dormant season — in the winter — which, he suggested might be the answer to some difficulties.

"The control of woody brush by the application of herbicides is an economical actuality, but there is much need for extensive basic research and experimentation over a long period of years."

The speaker illustrated his talk with colored slides showing the results of chemical spraying in some of the experimental plots.

TUNNEL DEVELOPMENT

(Continued from page 23)

new development, the Commission has completed construction of a control and side dams at Rocky Island Lake, 50 miles upstream from the project. This reservoir which will cover an area of approximately 16,000 acres, will ensure a ready and adequate water supply to maintain the power output at "Tunnel."

Classified Ads

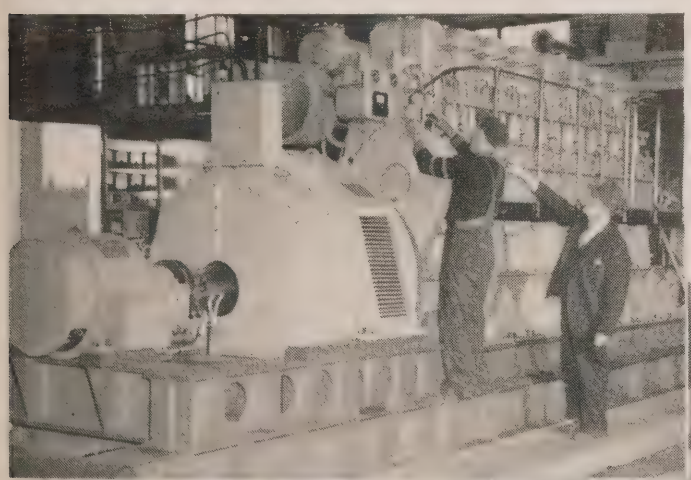
FOR SALE

1—C.G.E., 10 K.V.A., 2200 V., 6.6 amp. Constant Current Transformer, Serial No. 2075339—rebuilt in 1940.

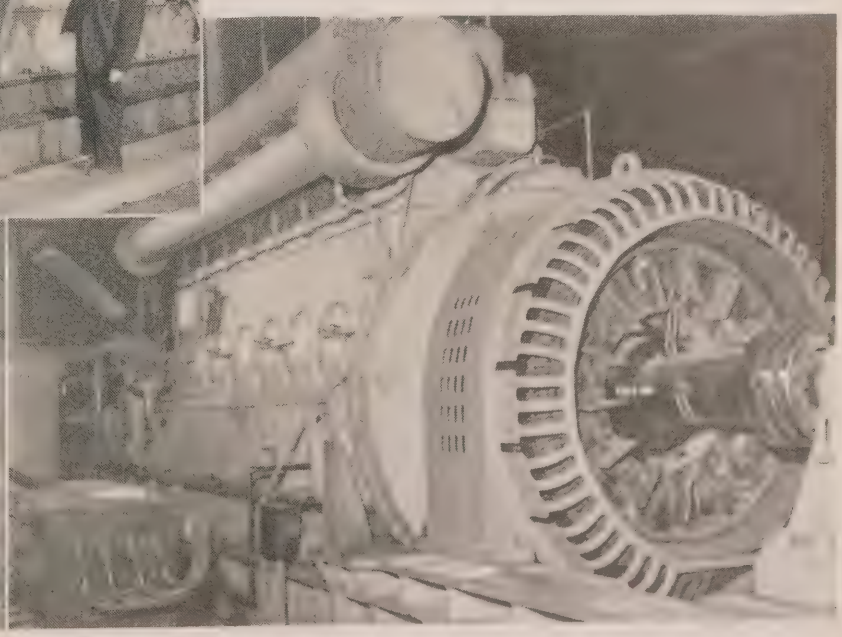
1—C.G.E., 10 K.V.A., 2200 V., 6.6 amp. Constant Current Transformer, Serial No. 1911987—rebuilt in 1942.

Additional information may be obtained by contacting Mr. R. Harrison, Manager of Scarboro Township Public Utilities Commission, 1666 Kingston Road, Toronto 13. Telephone Howard 2102.

When I was young I used to think money was the most important thing in the world. Now that I'm old I know that it is.







DIESEL UNITS AT HAMILTON

CLOSE-UP VIEW of 500 kw diesel power unit installed in Hamilton Steam Generating Station is shown below. Hydro also has three other diesel units at this station, a second 500 kw unit (top left), and two portable 175 kw units (bottom left). Seen starting up one of the 500 kw diesel units is Cliff Hannaford, operator, with H. Leyland, plant supt., instructing.



WHEN THE Sarnia Hydro-Electric Commission met in inaugural session, George N. Galloway, a veteran member of the commission was elected as its chairman. Shown, left to right, are Perry E. Battram, Commission Secretary; Chairman Galloway; F. F. Walsh, Vice-Chairman. Standing, H. A. Luckins, Accountant; Charles Phelps, Assistant Manager; Commissioner Dennis Herring; Commissioner John T. Barnes; Mayor W. C. Nelson and Manager Claude McMann. Photo courtesy *Sarnia Observer*.

Distribution Problem

"Improved Wire And Cable For Electrical Utilities" Topic Of Address Delivered By E. D. Bent, Montreal, During Annual A.M.E.U. Convention in Toronto

NEW and improved materials, resulting from developments in the field of rubber and plastics, are helping utility engineers to solve the problem of improving the appearance of residential urban areas.

This fact was given emphasis by E. D. Bent, Chief Engineer, Wire and Cable Division, Northern Electric Company, Montreal, in dealing with the subject of "Improved Wire and Cable for Electrical Utilities," during the recent A.M.E.U. Convention in Toronto.

As an alternative to placing a distribution system underground using conventional ducts, the speaker suggested the purchase of certain rubber and plastic insulated wires for direct burial in the ground.

In this connection, he advised that "these materials are being used as insulants and jackets where corrosion resistance, light weight or low-cost are of prime importance."

While the most effective means of improving the appearance of a distribution system was to place it underground, an underground system lacked the flexibility of an overhead system unless it was placed in ducts, the speaker continued. As a compromise, shielded primary cables as well as pre-assembled aerial cables had been developed to improve the appearance of overhead distribution while retaining its flexibility, he pointed out.

The shielded primary cable consisted of a stranded copper conductor insulated with rubber, Flameseal, or polyethylene, shielded with copper tapes or a copper braid over which a weatherproof braid or a jacket of Flameseal or neoprene was applied, Mr. Bent stated. Through the use of modern high voltage insulants, shielded primary cables now enjoyed improved dependability, he also claimed.

Pre-assembled aerial cables were also a compromise between conventional overhead construction and underground construction. The most commonly-used cable was the type consisting of one, two, or three insulated jacketted conductors cabled together, then lashed by means of a copper strap to a copperweld messenger strand. The insulated and jacketted conductors could be supplied also on individual reels, so they might be lashed, by means of a spinner, to the copperweld messenger after it had been installed with the proper tension, the speaker added.

Referring specifically to underground distribution, Mr. Bent stated that besides providing an improved appearance, this type of distribution was immune from storm damage and eliminated the hazard of broken wires. In respect to primary underground distribution, he stated that PILC and VCLC power cables installed in ducts were preferred for the distribution of large amounts of power at the higher voltages. Where cost was a real factor, polyethylene insulated cables buried directly in the earth had been used for supplying smaller loads in at least two places in Southern Ontario, he said. This type of installation was very inexpensive, and polyethylene's excellent resistance to corrosion and moisture should ensure satisfactory operation for many years. Flameseal had also been used, buried directly in the earth, as an insulant on conductors operating up to 5,000 volts, and it was being considered for use up to 10,000 volts on buried street lighting circuits.

With regard to secondary distribution, Mr. Bent stated that large cities were making frequent use of a grid of single conductor asbestos insulated, lead-sheathed network cables to supply their 220- or 208-volt loads in areas where the loading was high. Further, he said, that a low-cost underground secondary distribution for residential areas could be achieved by the use of Flameseal insulated wire buried in the soil. This type of secondary distribution in conjunction with underground primary distribution transformers in kiosks or manholes provided the ultimate in appearance. In addition such a system was unaffected by the weather, and, in this respect, was more reliable than conventional overhead construction. Flameseal insulated single conductor cables might also be used underground in ducts as a substitute for lead-covered cables for low-voltage distribution.

Office Efficiency

Procedures Discussed At A.M.E.U. Accounting And Office Administration Panel

METHODS designed to increase office efficiency were outlined at the "Accounting and Office Administration" panel discussion, at the recent A.M.E.U. convention in Toronto.

Speakers included D. N. Durward of Galt, whose subject was "Depreciation of Miscellaneous Fixed Assets," R. S. Potter of Hamilton, who spoke on "Meter Room Records," and R. A. Read of J. D. Woods and Gordon Limited, whose topic was "Work Simplification in the Office." Chairman of the meeting was H. A. Howard, Manager of Thorold Public Utilities Commission.

Defining depreciation as "loss in fixed asset value," Mr. Durward listed a number of methods for estimating depreciation and spreading the cost over the accounting periods applicable. Estimates must be made, he said, of the period of useful life of the asset, its scrap value, and whether replacement was necessary.

Existing methods of setting up depreciation include straight line, productive use, reducing balance, annuity, sinking fund, and dollar years. Of these, maintained the speaker, the first two were probably the best, because of simplicity as well as acceptability to the Tax Department.

Illustrating his talk with a series of colored slides, the second speaker, Mr. Potter, described the system of meter room records adopted some years ago by the Hamilton Hydro-Electric Commission. The series showed several types of order forms, including service orders and inspection orders, and meter record cards of six different colors, each color representing a different year in the life-cycle of the meter. (Meters are ordinarily brought into the office, inspected and re-sealed every six years.)

The color system, stated Mr. Potter, was highly efficient, enabling office personnel to tell at a glance which meters were in need of service.

"Work simplification," declared Mr. Read, final speaker of the meeting, "has made great strides in industry since the beginning of the century, but has begun to take hold in offices only during the past ten years." Based on time and motion studies, and more particularly on review of general office procedures and practices, simplification processes have made a substantial contribution to increased office efficiency, he went on.

The speaker stressed the importance of periodic reviews of general systems and procedures, pointing out the necessity for a thorough investigation into every phase of the job to be simplified.

Mr. George Appleton, Toronto H.E.S., acted as Chairman during the discussion period which followed each paper.

VOLTAGE LEVELS

(Continued from page 18)

the new feeders in the new substation.

3. Rebuilding feeders at higher voltage or with heavier copper.
4. In areas where load density is high, consider the use of a low-voltage network.
5. In areas of lighter load density study the possibility of a primary network.
6. Bank secondaries of distribution transformers.

The last three methods resulted in greatly improved continuity of service.

Until such times as national or international voltage limits were established, a minimum of 110 and a maximum of 125 volts might be used as the limits at the point of utilization, the speaker suggested. When voltage limits were established by a recognized body, Mr. Ross urged that they be adopted unanimously and immediately.

The expense of installing voltage equipment represented only $4 to $10 per kva. in the sizes usually needed, compared with the investment of approximately $350 per kva. in existing central equipment, the speaker continued. Therefore, it was entirely illogical to provide service of inferior quality when an additional investment of about two per cent would provide an acceptable voltage level for all consumers.



OLD FRIENDS of long standing, Thomas E. Henry, Mayor of Stratford, and Col. James Harris, Commissioner, Kingston, talk over municipal Hydro matters during the annual convention.



"HOW BRILLIANT can you get?" asks M. J. McHenry, Director of Consumer Services, admiring handkerchief of J. F. Lynn, Stayner. H. T. MacDonald, H.E.P.C., and W. L. Wade, Nipigon, agree.

More Municipal Employees On Hydro Pension Plan

NINETY-FOUR municipalities and 4,072 employees were included in the Municipal Hydro-Electric Pension and Insurance Plan at the end of last year as against 86 municipalities and 3,711 employees on December 31, 1948, according to a report presented by Bertram Merson at the annual meeting of the Ontario Municipal Electric Association on February 28. During last year the amount of life insurance benefit in force increased from $10,784,645 to $12,695,390. At the close of 1949, 275 employees were drawing pensions, compared with 241 at the end of 1948. Monthly pensions paid in 1949 amounted to $9,521 compared with $8,015 in the previous year. There were 432 death claims since the inception of the Plan in 1929 calling for the payment of $1,105,400.

The committee, which, in addition to Director Merson, included Chairman P. R. Locke; Vice-Chairman A. B. Manson; and Director R. S. Reynolds, suggested that the O.M.E.A. and the A.M.E.U., together with The Hydro-Electric Power Commission of Ontario, give consideration to improvements in the present Pension and Insurance Plan with a view to increasing pension benefits.

Tribute was paid by Mr. Merson to P. B. Yates of St. Catharines, who recently retired from the chairmanship of the committee, with which he had been associated since the establishment of a pension and insurance scheme for local Hydro commission employees in 1929. Announcement was made that R. S. Reynolds, Secretary and Manager of the Chatham Public Utilities Commission, had been appointed to fill the membership vacancy.

ASSOCIATION OF MUNICIPAL ELECTRICAL UTILITIES

Officers Elected For 1950

PRESIDENT:	R. Butter	Owen Sound
VICE-PRESIDENT:	M. W. Rogers	Carleton Place
SEC'Y-TREASURER:	W. R. Mathieson	Toronto
DIRECTORS AT LARGE:	N. A. Grandfield	Brantford
	R. S. Reynolds	Chatham
	O. H. Scott	Belleville

DISTRICT DIRECTORS:

Western	V. A. McKillop	London
West Central	A. W. Bromley	Kitchener
Niagara	H. A. Howard	Thorold
Toronto	G. Lillie	Toronto Hydro
East Central	G. E. Chase	Bowmanville
Georgian Bay	N. A. Belfry	Uxbridge
Eastern	N. J. Douglas	Smiths Falls
Northwestern	A. W. H. Taber	Fort William
Northeastern	R. H. Martindale	Sudbury

EFFICIENT UNITS

(Continued from page 13)

Regional Offices, and based on their intimate knowledge of local requirements.

Recapitulating, Mr. Hearn said the whole objective in setting up the Regional Offices was to enable the ever increasing volume of Commission business to be carried out in the most efficient manner possible. The Commission, he added, was satisfied that this goal was being attained, due largely to the considerable measure of co-operation accorded by municipalities.

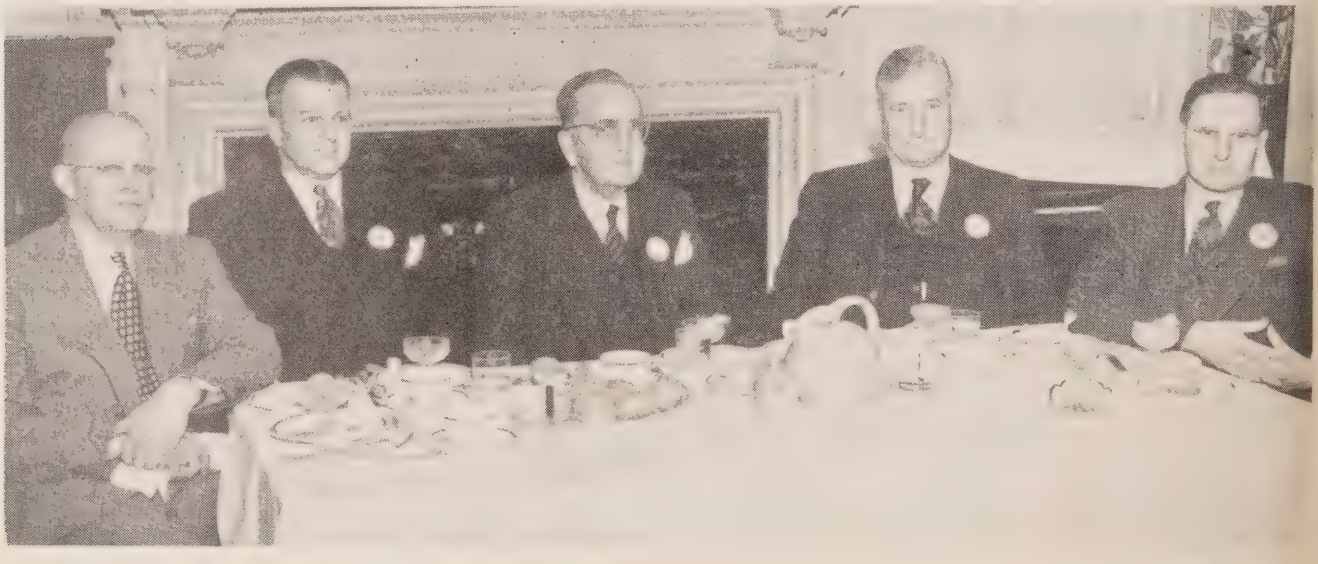
NEW SNOWMOBILE FOR OWEN SOUND AREA

Owen Sound Rural Operating Area is ready for an eventuality in the form of heavy snowfalls. It has recently acquired a snowmobile designed to take line crews through even the worst drifts, thus overcoming what was formerly a serious hindrance to repair work during big storms.

Equipped with skis in front and a track in the rear, the snowmobile is capable of carrying a crew of 12 men, or 1½ tons of freight. It has a cruising speed of 25 miles per hour, with a maximum speed of 45 mph.

Serious young man: "Do you enjoy Kipling?"

Flapper: "I don't know — how do you kipple?"



DURING THE annual dinner meeting of the Electrical Employers Association of Ontario the panel above discussed "The Line Crew: Make-up, Selection, Equipment and Training." The group, left to right: C. I. Bacon, General Manager, Cornwall Street Railway, Light and Power Co., Ltd.; A. W. H. Taber, Manager and Secretary-Treasurer, Hydro-Electric Commission, Fort William; Wills Maclachan, H.E.P.C., Secretary-Treasurer and Engineer, Electrical Employers Association; L. G. McNeice, General Manager, Water, Light and Power Commission, Orillia, and R. Harrison, General Manager, Scarborough Public Utilities Commission.

NEWS IN BRIEF

BREAKS ALL RECORDS

Electric energy output in the United States broke all records during the week ending January 14, 1950, it was reported recently. Total output for the week amounted to 6,028,589,000 kilowatthours, or five per cent greater than the output for the corresponding week of 1949.

This was the first time in the history of the electric power industry that output had exceeded six billion kilowatthours, said the report. The previous high of 5,996,606,000 was recorded for the week ending December 18, 1949. The increase was credited largely to the widespread use of electric heating devices, especially in the west and middle west sections of the country.

OUTPUT OF CENTRAL ELECTRIC STATIONS

All-Canada output of electric energy by central electric stations decreased two per cent in November as compared with the preceding month, but was eight per cent above November, 1948. Total for the first 11 months of the year advanced four per cent over the similar period of 1948.

The month's output amounted to 3,914,482,000 kilowatthours as compared with 3,975,153,000 in October and 3,634,307,000 in November, 1948. During the 11 months ending November, 42,633,419,000 kilowatthours were produced as against 40,874,153,000 in the same months of 1948.

GAS LIGHTS TO DISAPPEAR

Chicago is contemplating the replacement of the last of its gas and gasoline street lamps with electrical fixtures, according to a bulletin issued by the Federal Power Commission.

Ward E. Hanagin, City Superintendent of electricity, stated recently that his crews expected to begin shortly the job of removing the remaining 310 old-style lamps still in use in outlying sections of the city, and replacing them with modern electric lights.

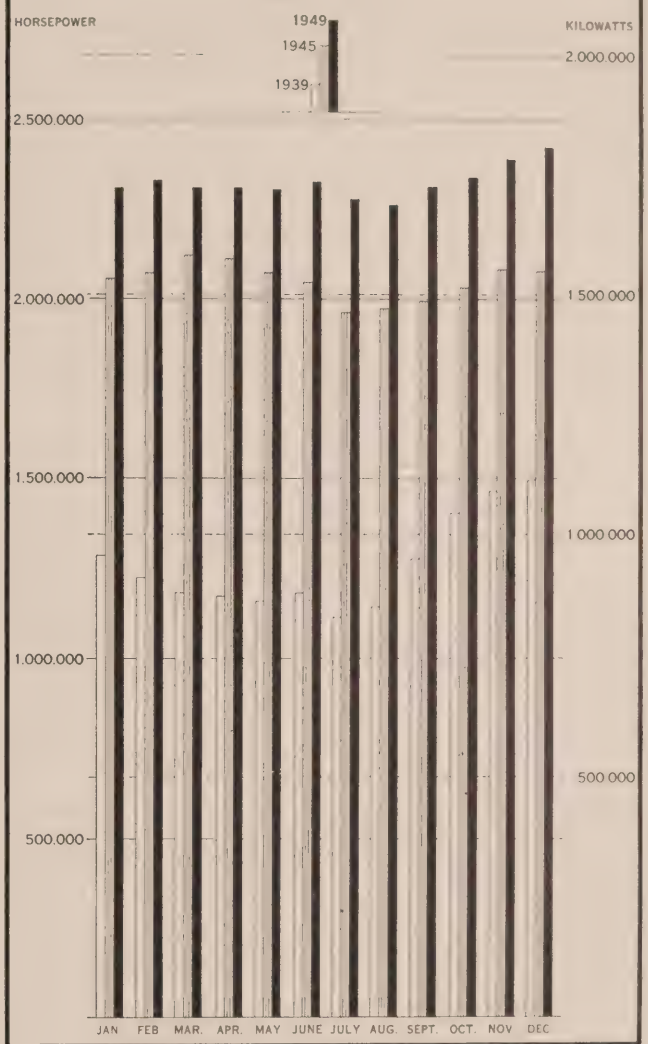


THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW DECEMBER 1949	MAXIMUM 20-MINUTE PEAK KW DECEMBER 1948	PER CENT INCREASE
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
Southern Ontario System...	1.987.035	1.827.642	+ 8.7
Thunder Bay System.	166.978	132.945	+ 25.6
Northern Ontario Properties.	218.217	207.629	+ 5.1
TOTAL GENERATION — INCLUDING POWER PURCHASED			
Southern Ontario System...	1.806.850	1.687.992	+ 7.0
Thunder Bay System.....	174.878	154.545	+ 13.2
Northern Ontario Properties.	221.712	214.634	+ 3.3



HYDRO News



VOL. 37 APRIL, 1950 NUMBER 4



THIS KIND OF TARGET PRACTICE
costs money

Yes, Junior scored a bulls-eye all right . . . right on your pocketbook. You won't be called on to replace it yourself, but as a citizen of Ontario and one of the owners of Hydro, you pay for the damage in the long run.

Actually, the insulators themselves are comparatively inexpensive. But the damage that can result from a broken insulator can cause serious power interruptions by cutting service on that line. Hospitals may be deprived of power at a critical moment. Machines in factories may be stopped. Homes and farms may be affected, too. There is the added hazard of fire and if the wire falls to the ground, property and lives are endangered.

When an insulator is smashed, a crew of men and a truck travel miles to locate and repair the damage . . . and that costs money. Hydro appeals to you to help to prevent the deliberate or careless destruction of Hydro property . . . *your* Hydro property.



The Hydro-Electric Power Commission of Ontario

HYDRO News

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER SHOTS

HAUNT of sportsmen, avenue of commerce and an important source of Hydro power, the mighty Nipigon River is the subject of this month's cover illustrations. During a visit to Alexander Generating Station, Hydro News Photographer, J. Burt Helling, recorded the front cover shot of the Nipigon cascading over the spillwall at this station. The aerial view on the back cover demonstrates the vital role the river plays in transporting vast quantities of pulpwood and sawlogs to the mills of Northern Ontario every year. Hydro's Virgin Falls control dam is also shown in this photograph.

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Erecting the 115-kv busses on a switching structure at Kipling T.S. near Islington.

Be A Thoughtful Host

IN THE not too distant future, Canadians once again will be seeing thousands of cars bearing American license plates travelling in the cities, towns, villages and over the highways of this country.

In anticipating this year's influx of these friendly visitors, it would be well if Canadians were to take time out to do a little thinking about some of the ways in which we, as individuals, can show our American cousins that we are sincere in our efforts to welcome them and to see that they take back with them only the happiest memories of their stay in our midst.

A friendly enquiry as to whether the visitor might be seeking direction to some particular place, a few helpful suggestions as to places he might like to see and the road or roads he should take are just a few of these "little extras" which will be appreciated and which will make lasting friends for Canada and Canadians.

There are still many Americans who are not too familiar with Canada. Canadians can render a service to themselves and their country by giving some interesting facts about Canada when an opportunity presents itself.

If we are asked, we can tell our visitors that while the area of the United States, including Alaska, is 3,608,787 square miles, the area of Canada, including the Yukon Territory, exceeds that figure by 236,357 square miles. It is understandable that many Americans — and Canadians — have not taken the time to look into such figures.

Many visitors from the U.S. will be surprised to learn that the total land area of Ontario alone is 363,282 square miles and that the water area of this province is 49,300 square miles, making a total area of 412,582 square miles which is more than large enough to contain the following seventeen states of the United States: Rhode Island, Delaware, Connecticut, New Jersey, Massachusetts, New Hampshire, Vermont, Maryland, South Carolina, Maine, Indiana, Kentucky, Virginia, Ohio, Tennessee, Pennsylvania and Mississippi.

Members of the Hydro family throughout Ontario have many opportunities of talking to our American friends. They should make the most of these opportunities to give these visitors an idea of the important role which Hydro has played, and is playing, in Ontario's onward march of progress.

This summer, many American visitors are likely to stop at the sites where some of the big postwar Hydro projects are under construction. Some will be keenly interested in learning about the work which is going on before their eyes. By taking time to answer questions and explain the important features of a project, guides and officials can render an important public relations service to Hydro, to Ontario and to Canada.

Regardless of our location and the job we are doing, we are all more than likely to meet many American visitors before the summer is over. Let us all take time out to treat them the way in which we would like to be treated if we were visiting the United States or another country.

New Era of Service

by
Harry M. Blake
Hydro News





OTTAWA HYDRO-ELECTRIC Commission has moved into the building at 56 Sparks Street (left) which was formerly the headquarters of the Ottawa Light, Heat and Power Company, vacating their premises at 109 Bank Street in favour of Ontario Hydro's regional staff. The present Ottawa Commission comprises (left to right) Stanley W. Canniff, General Manager; Norman B. MacRostie, Commissioner; Frank H. Plant, Chairman; Mayor E. A. Bourque, Vice-Chairman, and W. Cecil Lewis, Secretary-Treasurer. The recent unification of Ottawa's two power systems should greatly assist the local commission in its planning to meet the needs of the many new electrical consumers brought into the city this year by the annexation of outlying districts of considerable area in both Nepean and Gloucester Townships.

COMPLETION of negotiations resulting in the Ottawa Hydro-Electric Commission acquiring the properties of the Ottawa Light, Heat and Power Company last January for $7,775,000 has ushered in a new era in the history of electrical services to the people of Canada's capital. At the same time this momentous event focusses attention upon the long march of progress since electricity was first used in Ottawa in 1887.

The taking over of the plants of the Ottawa Light, Heat and Power Company permits the unification of two distributing systems and eliminates the necessity for duplication in administration and operation. The total generating capacity of the Ottawa Light, Heat and Power Company's hydraulic plants is only 16,000 horsepower, but in addition to these plants, the Ottawa Hydro-Electric Com mission was assigned a contract for the purchase of power from the Gatineau Power Company.

Originally, this contract was for 62,500 horsepower (maximum peak demand), but an arrangement with the Interprovincial Utilities Limited, which has been organized to take over the remaining business of the former Ottawa Light, Heat and Power Company, provides for the supply of 5,000 horsepower from this contract to the city of Hull, Quebec. The Ottawa commission will, therefore, be supplied by Gatineau with 57,500 horsepower. Together with the present load of approximately 60,000 horsepower supplied by Ontario Hydro, maximum loads approximating 133,500 horsepower are now available to the Ottawa Hydro-Electric Commission.

Early Developments

Electricity has been used in Ottawa since 1887. Founded by Thomas Ahearn and Warren Y. Soper, the Chaudiere Electric Light Company in that year commenced operations with one small water-driven dynamo. It supplied the customers for 123 incandescent lamps, and was one of the first electrical installations in Canada.

In 1894 amalgamation with the Standard Electric Light & Power Co. and the Ottawa Electric Light Company was effected and the new company thus formed became the Ottawa Electric Company.

Business continued to grow until the spring of 1900 when the great fire destroyed four out of six of the Company's plants and several miles of distribution lines. It is interesting to note that distribution at that time was at 1,100 volts single phase.

First Central Station

Following the fire, plans were laid for the rehabilitation of the system and included the pooling of water resources, construction of the first central station in Ottawa and the modernization of the old Standard Electric plant which fortunately had not been burned and with the addition of the Company's steam station had been able to carry on a satisfactory interim service.

The central station was placed in service in 1901 and included a powerhouse and distribution substation in the same building with lines radiating out from this point to the city loads. In 1905, one of the first steam turbines in Canada—a 1,500 kilowatt unit—was installed.

Further amalgamation of public utilities between 1906 and 1909 resulted in the formation of the Ottawa Light, Heat and Power Company which up to the end of last year continued to be

Purchase of Ottawa Light, Heat and Power Company By Ottawa Hydro Is Momentous and Historic Event

UNIFICATION OF two power distributing systems will eliminate duplication of power lines in many of Ottawa's residential areas. Here Ottawa Hydro-Electric Commission lines are shown side by side with lines of the Ottawa Light, Heat and Power Company on the same street.

BELOW—Holland Avenue substation acquired by the Ottawa Hydro-Electric Commission in the recent purchase of the Ottawa Light, Heat and Power Company. Station was built in 1924.



one of the two principal suppliers of electric power as well as of gas to Ottawa and district.

Oldest Member Hydro Family

Ottawa first purchased power from The Hydro-Electric Power Commission of Ontario in 1907. The capital city is, therefore, one of the oldest of the 310 commissions and public utilities which make up the great Hydro municipal system. Actually, the Ottawa Hydro Electric Commission was not formally inaugurated under that title until 1909, but it was on August 30, 1907, that Sir Adam Beck negotiated the purchase of 2,500 horsepower from the Ottawa and Hull Power Company, which operated an hydraulic plant on the Quebec side of the Ottawa River at the Chaudiere Falls, and turned the entire block over to the city of Ottawa.

With the steady growth of Ottawa's population and the increasing use of electricity by the citizens, there was an almost incessant demand for more power. In 1910 arrangements were made to increase the load from the Ottawa and Hull Power Company to 4,000 horsepower, and in 1913 the Ontario Commission cancelled all the existing contracts and arranged for the purchase of 20,000 horsepower from the Ottawa

and Hull Power Company, virtually on behalf of the Ottawa Commission. This block of 20,000 horsepower was purchased by Ontario Hydro, first from the Ottawa and Hull Power Company and then from its successors, the Gatineau Power Company. Until 1947 it was supplied to Ottawa, with some modification as to cost, under the terms of a thirty-three year agreement between the Ontario Commission and the vendor company. Since 1947 supply has been on a year-by-year basis.

New Power On Cost Basis

By 1928 the population of Ottawa, without considering transients, was well over the 120,000 mark. Electricity was being used for many time and labour-saving purposes around the home as well as for lighting. The combined power resources of the Ottawa Hydro-Electric Commission and the Ottawa Light, Heat and Power Company were insufficient to meet the tremendously increased consumer demand. It was decided not to temporize with further limited load agreements, and insofar as the supply of Hydro power was concerned, Ottawa became a straight cost municipality for its additional requirements beyond the 20,000 horsepower block from Gatineau. And now, with the taking over by the local commission of the properties of the Ottawa Light, Heat and Power Company, the destiny envisaged in the early years by the pioneers of public ownership has been fulfilled.

The Ottawa Hydro-Electric Commission has built up an impressive power distribution system which is now being rounded out by the facilities acquired from the Ottawa Light, Heat and Power Company.

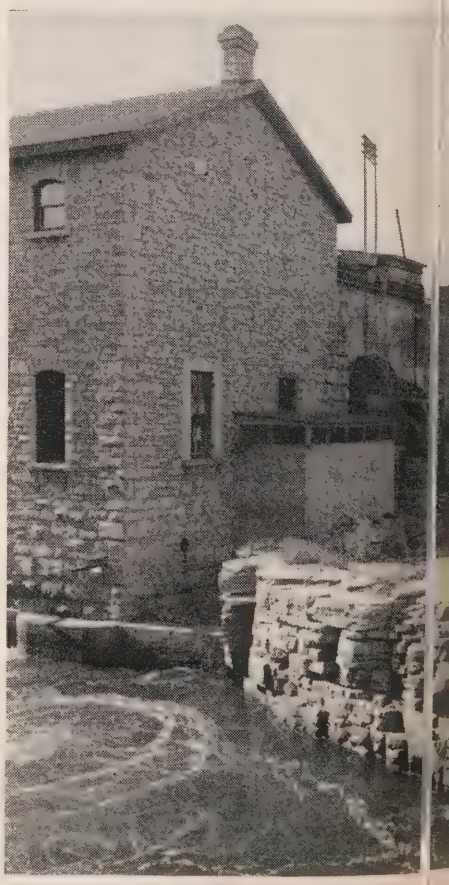
(Continued on page 28)



OFFICES OF Hydro's Eastern Region are now located in the Bank St. building previously occupied by the Ottawa Hydro-Electric Commission which has moved to the OLHP's Electric Building.

★

RIGHT—Tailrace of No. 4 powerhouse of the Ottawa Light, Heat and Power Company at Chaudière Falls which was taken over by the Ottawa Commission in the recent merger.





NEW RIVERDALE substation—capacity 30,000 kva. Hydro power is brought in at 110,000 volts, stepped down to 11,000 volts and passed on to the Ottawa Commission for city distribution.

"New Canadians" Praise New Freedom Found Here

Letters To Commission Indicate That Former Europeans Temporarily Employed by Hydro Under Government Plan Are Anxious For Citizenship

PRAISE of Canada, its people and its democratic ways is sounded in letters received by the Commission from "New Canadians" formerly employed on temporary labouring jobs at Hydro power developments. In common with other Canadian enterprises, Hydro employed a number of the men brought out from Europe under the Dominion Government plan to supply limited quotas of selected labourers to organizations affected by the then critical manpower shortage. Practically all of those engaged by Hydro on its waterpower developments have fitted in with their Canadian fellow workers and the Canadian way of life. Since leaving the Commission's employ, practically all of them have been doing well at the trades and vocations for which their widely-varied training and educational qualifications have suited them.

Writing to George Roy, Construction Superintendent for the Ontario side of the LaCave development North of Mattawa on the Ottawa River, "M.M." stresses the human treatment he received not only from the administrative staff but also from the Canadian-born workers with whom he was associated.

"Although," says he, "my previous education and career was of a professional nature, you will agree that the work I was engaged in was, in comparison, quite unusual. However, this is of no consequence as I shall always cherish the memory of my first employment in Canada. Long will there linger in my happy memories the co-operative atmosphere, the mutual respect, the unselfishness of the workers regardless of their standing. This brotherly helpfulness has made a wonderful impression upon me; likewise, I am sure upon all of the displaced persons, who, for many years, did not believe such qualities remained in men."

Message To Ottawa

In a letter addressed to D. MacNamara, Deputy Minister of Labour at Ottawa, "V.O." speaks on behalf of a group of "New Canadians" who came out to Hydro in the spring of 1948.

"We found freedom," he says, "which we had been deprived of for many years and have made many friends among Canadians. We wish to mention the many friends within The Hydro-Electric Power Commission who went out of their way to make us feel at home and did everything in their power to assist us in getting settled down here. We certainly look forward to the day when we can call ourselves Canadians upon receipt of our Canadian citizenship."

In "Personnel" Dossier

In the dossier kept by P.F.L. Riches of the Commission's Personnel Branch are to be found many letters of an autobiographical nature from "New Canadians" who began life in this country by working for the H.E.P.C. In the beginning they describe the years of suffering and hardship which followed the invasion of their European homelands and continued in concentration camps for long after the war. Then, suddenly, it is as if the clouds were suddenly rolled back and the rooms in which they write were flooded with sunlight as they go on to describe their experiences in Canada.

This is from "M.K.", a qualified physician in his own country, who has received permission from the Ontario College of Physicians and Surgeons to write the Medical Council examination this year. If he passes, it will enable him to practice his profession in this province.

"I would like to express my intense happiness," writes "M.K.," "at having the remaining members of my family with me. My mother is a former high school teacher and shares with me the happiness and contentment that come from living in a land of freedom and liberty. My brother, who is a Doctor of Law and a former barrister and judge, is with me also. May I state that the kindness, friendliness and understanding of both the Canadian Government and the fine Canadian people surpassed immeasureably my fondest hopes. I therefore hope to become a Canadian citizen so that I may be given the opportunity to translate my loyalty, appreciation and gratitude by offering the remainder of my life's work as a surgeon to the community of gracious Canadians for their tolerance and understanding."

Praise For Government

"The Canadian Government," writes "A.B.", "was one of the first to see the problem of displaced persons and to open the doors to the physically fit and later to their relatives . . . for that all these people are thankful." Many persons, Mr. "B" explains, who had the opportunity, did not sign up to come to Canada because they did not think they could stand the rigours of working in the bush and in the mines. "But," Mr. "B." goes on, and you can almost hear the lift in his voice, "these difficulties did not stop me. Thinking that later I might get into my own profession as civil engineer, I signed a contract with Ontario Hydro in the summer of 1948. The physical work I had to do in the bush was not too hard although I was unaccustomed to it . . . Working and language difficulties were easily overcome thanks to the kind help of Canadian workers."

Based not only on his educational qualifications but upon his satisfactory performance of every task allotted to him during his contract term, Mr. "B" has now, with the help of the Commission, obtained work along his own professional lines.

Thrilling Experiences

Many of the "New Canadians" who came to work for Hydro served in the "underground" during the Nazi occupation of Europe. One of these was "T.L." who since completing his contract with the Commission, has been working as a first-class mechanic, attending technical school in the evenings. "L" seems to have been always crossing frontiers on one dangerous mission or another. On the last occasion the frontier guards were so hot on his heels that he had to throw off pursuit by submerging himself in an ice-cold river. Finally, however, he won through to territory occupied by the United States army.

Escaped Firing Squad

The most hair-raising escape of all was experienced by a "New Canadian" named Richard, who terminated his contract some time ago but who is still working for the Commission.

During the war, Richard was a prominent figure in the "Underground" at Budapest. One evening along with many others he was gathered in by the Gestapo net. Next morning they were all marched out to the banks of the Danube for execution by a firing squad. They faced the river, with the soldiers behind them and were picked off one by one. Richard turned his head as the man beside him fell, and the next bullet, instead of killing him, broke his jaw. He fell into the Danube, where with his hands bound, he would soon have drowned if the Nazis had not fished him out. He was sent to hospital but only to be patched up so that he could be executed as soon as possible in the approved manner. A few days later two Nazi officers called for him. He was hurried into a car and driven off. Rounding a curve on a lonely road, the officer who sat beside him, slapped him on the thigh.

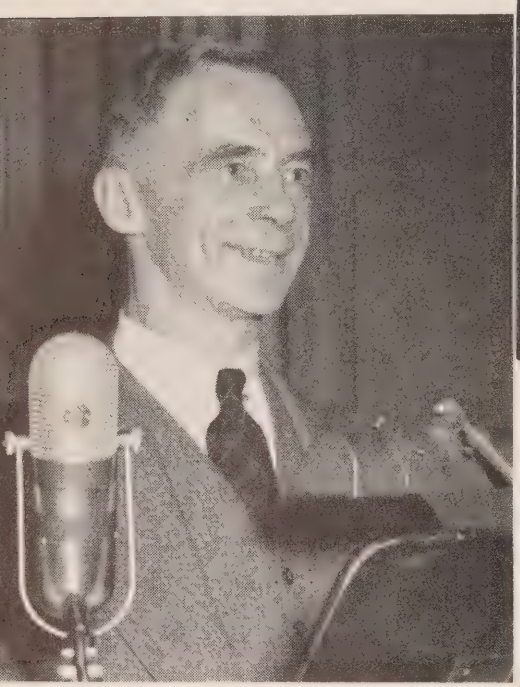
"It's all right, mate. We're Carl and Maurice from the 'Underground'."

•

Money is an article which may be used as a universal passport to everywhere except heaven and as a universal provider for everything except happiness.

—Wall Street Journal.

VID FORGAN, Director of Hydro's Construction ision, looks exceptionally happy as he welcomes) of "his boys" (shown registering at the right) their annual convention at the King Edward Hotel Toronto. It was a record attendance of delegates d from every point of view a memorable occasion.





Hydro "Shock Troops" Laude

"Doing A Real Job," Declares Chairman Saunders — Record Achievements Reviewed At Convention Of Construction Division — Big Task Still Lies Ahead In Satisfying Future Power Demands

COMPLETION of Hydro's present $592,000,000 program of construction and development is unlikely to bring any respite to the labours of the Commission in meeting the increasing power requirements of the people of Ontario. New construction tasks on a major scale may begin before projects now in hand are finished. This was made clear by Commission Chairman Robert H. Saunders at the nineteenth annual convention of the Construction Division at the King Edward Hotel, Toronto.

"You are doing a real job," Chairman Saunders told his 'shock troops.' "And you are getting through with it on schedule or better. We are going to do our best to see that you keep right on with the good work. We hope to have a new job ready for you soon at Niagara; and then later on, perhaps, you may have a chance to tackle that tremendous project on the St. Lawrence River."

Earlier in the day, at the business sessions presided over by A. J. Willick, Line Superintendent, Dr. Otto Holden, Assistant General Manager—Engineering had referred to the work on the present Hydro program scheduled for this year.

"Our capital budget for 1950," said Dr. Holden, "will reach an all time high of $156,000,000. Except by our governments (Federal and Provincial) in time of war, so great an expenditure in a like period of time has not, I believe, been exceeded by any other organization in Canada."

Although Dr. Holden went on to point out that Canada was beginning to catch up on its back-log of power requirements and that before long there would be a levelling off, he, nevertheless, envisaged a future expansion far beyond the horizons of present electrical needs. In Southern Ontario there were still two great sources of electrical energy—Niagara and the St. Lawrence, while in the North, which would soon be tied in with the South by the Commission's LaCave development, there were a number of good power sites. When new developments were undertaken, he was sure that they would be carried through by Hydro's Construction Division with the same ability and energy which had characterized its activities to date.

Impressive Figures

Some idea of the task carried out by the Construction Division at the present time was conveyed by its Director, David Forgan in his address of welcome to the delegates. During the past twelve months the Division had maintained from 10,700 to 13,000 men in the field and had housed nearly 6,000 of them in 59 camps. Meals to the number of 6,225,000 had been served, involving the consumption of 6,500 tons of food —"enough," the speaker said, "to fill six 45-car trains."

There was evidence that the vitamins derived from the consumption of this immense quantity of provisions had been put to good use. Here are a few solid "items" involved in the construction program and referred to by Mr. Forgan:—Over 20,000 acres of land cleared; 79,000 wooden poles erected and 2,430 steel towers, weighing 22,770 tons, erected; 3,200 miles of rural and communication line built; 710 miles of transmission line constructed; 28,000 miles of conductors strung; 5,000 tons of structural steel used and, 5,000 tons of reinforcing steel placed; 1,125,000 feet of fibre conduit and 315,000 feet of metal conduit laid; 127 miles of control cable laid; 324 power transformers and 225 breakers erected; 1,167,000 barrels of cement used and 778,000 cubic yards of concrete poured and last, but not least, 10,500 kegs of nails driven.

A few figures from Mr. Forgan showed how the present power development program was advancing toward completion. Eighteen months ago, Mr. Forgan said, fifty-eight percent of the work was associated with power development, 29 percent with line construction

and 13 percent with station construction. Today 40 percent of the effort was concerned with power development, 40 percent with line construction and 20 percent with station construction.

Roles In Cycle Standardization

Outlining the Frequency Standardization Program now being carried out in Southern Ontario, Director H. H. Leeming pointed out that the project had been allocated to two main divisions of the Commission. The Engineering Division, he explained, would be called upon to supervise the standardization of the Commission's properties for 60-cycle operation. This involved the generating stations, transmission facilities, transformer stations and municipal systems. The changeover at generating stations, he announced, was scheduled to start in 1954. In the majority of cases all transformers now being purchased were of the dual frequency type.

In the case of the municipal systems, Mr. Leeming pointed out, standardization, in certain cases, will entail requests for engineering assistance. Municipalities might require studies and decisions to be made with regard to the capacity of the stations, the type of distribution system and the rebuilding of equipment.

(Continued on page 12)



DISCUSSING VARIOUS phases of the Commission's postwar construction program, H. D. Rothwell, left, Administrative Assistant—Regions, compares notes with H. H. Leeming, F.S.D. Director.

★ ★ ★

MAKING THE most of a valuable opportunity, the Hydro News photographer caught the distaff side of the Construction Division and other guests as they honored Miss Lulu Hutt, who recently retired as secretary to Director David Forgan. Front row, left to right, Pat Horne, Audrey Townsend, Barbara Bougourd, Florence Dennison. Second row: Dorothy Stewart, Mae Marr, Eva Livack, Margaret Smallpage, Miss Hutt, Dorothy Brett, Olive Graham, Pat McManus, Myrtle Hoebke. Top row: Pat Irwin, Margaret Jones, Phyllis Middleton, Phyllis Foreman, Virginia Bean, Bernise Shurgold, Merle Shugg, Helen Beatty, Kay Pickard, Dorothy Parker, Anne Boylan, Theresa McRae, Robin Adair and Anne Niittynen.



APITAL BUDGET for Hydro construction and development in 1950 is estimated at $156,000,000. "An all-time high," says Dr. Otto olden, Assistant General Manager, Engineering, "never, I believe, in a like period of time, xceeded by any other organization in Canda, except by our governments in time of war."







TOP RIGHT—This happy band of "Pine Portagers" left to right, are Fred Chuckley, Bob Cunningham, Corey Robbins, Lou Gallagher and Dr. J. S. Pearson. They are smiling because construction at Hydro's new development on the Nipigon River, scheduled for service early this summer, is right on schedule.

MIDDLE RIGHT—Tuning up at the mike for the addresses they have prepared for a not-altogether-unexpectant audience are (left to right) Gordon Mitchell, David Forgan, Angus Richardson, John Stark and Harry Leeming. Addresses at the convention covered every phase of Hydro's postwar expansion program.

LOWER RIGHT—"You all know the answer," prompts Ike Hicks, (with cigar) "if anyone should ask which is the best division in Hydro!"—"And the cream of the Construction Division?" "The Line crews;"—"You're absolutely correct!" he tells V. Cuff, (left), W. S. Juby, C. Bailey, R. Gunsinger and W. Jacyna.



SE DAYS we are facing a real test of our way e . . ." W. Ross Strike, K.C., the Commission's d Vice-Chairman, tells Hydro construction men. cracy is a two-way street—recognition of ndividual as a "person" implies his res- bility, in turn, to his job as well as to society.







IGHT—"We'll back you up on progress at against Des Joachims!" Harvey Self, Al. n, Norm. Henderson, Reg. Ellis and George eft to right, assure Project Manager W. B. ie, third from left. But they didn't as the event ed in the lower photograph plainly shows.

E RIGHT—In the meantime, a group of Hydro ction engineers lines up in front of T.T.C. darters for a tour of Toronto's subway. Headed ll McKenzie (centre) members of the y await their guides after viewing plans novie films of the City's big project.



RIGHT—Deserted by his friends, Bill Crombie e haughty razzing of the Des Joachims team Ed Krupp, Dan Hughes, Stan Fisher, Johnny Nnara, Jim Pulien and Bill Hogg—even Mrs. -taunt him. "Back to LaCave 'till 1952," ll Bill. "OUR opening is this summer."

HYDRO "SHOCK TROOPS"

(Continued from page 9)

It was explained that this activity of the Engineering Division would be closely co-ordinated with the work carried out by the Frequency Standardization Division.

"The Frequency Standardization operation," said Mr. Leeming, "is vastly different from anything the Commission has undertaken previously. The equipment to be dealt with consists of industrial, commercial and domestic consumers' apparatus and appliances, and very large quantities are involved. For the field work, very close scheduling is essential in that change-over "cuts" have to be planned, not within a week, or a day, but within the hour. The standardization crews working in each area will be mobile; in fact, the planning and operations in the field, in some respects, are very similar to an army operation."

Referring to the four major cities involved in the Frequency Standardization program, Mr. Leeming stated that the change-over in London was scheduled to begin in June of this year. For Windsor the year set was 1951. Work would start in Toronto in 1954, in Hamilton in 1955.

Getting Closer To Consumer

The Commission's regional organization and the necessity for it was explained to the convention by H. D. Rothwell, Administrative Assistant — Regions. The nine regions organized along identical lines to Hydro head office had been planned to bring the Commission closer to the public and consumer requirements. The wisdom of this policy of decentralization was already beginning to reveal itself. Together the nine regional headquarters were looking after many of the problems of more than 255,000 rural consumers scattered along 32,000 miles of rural line while attention, on request, was also directed to the needs of some 352 municipalities.

Safety Consciousness

"Make the safety program a part of the job from the beginning," was the advice Allan Fowler had for the engineers, superintendents, foremen and employees in every section of the Construction Division. The backing of the key officials on the job was absolutely necessary, Mr. Fowler stressed, to promote safety consciousness.

"Fire Prevention on Modern Construction" was the subject of a hard-hitting address by E. F. Bevis, Chief of Fire Services Division of the Ontario Fire Marshall's Office. Carelessness and disregard of approved prevention practices were the causes of most fires on construction jobs, Mr. Bevis affirmed. He had many useful suggestions to make and some correctives to apply with respect to certain situations which he reviewed.

The Hydro Employees' Association has now a membership of 7,500, G. R. Shannon told the convention. During the past year alone membership had increased by 2,300.

The Way To Peace

Guest speaker at the luncheon, presided over by A. T. Clark, was W. Ross Strike, K.C., the Commission's Second Vice-Chairman. Introduced by E. G. Archer, Mr. Strike struck a serious note. These were days, he said, when our way of life was being really tested. We must clear up the slums wherever we found them. We must take away the haunting fears that obsessed people less fortunate than ourselves. Given a decent environment and a fair opportunity to develop his own personality, the individual must in turn recognize his responsibility to the community. If this sort of thing were attended to, then the speaker believed that not only would there be no need to worry about a cold war, but that a true and enduring peace would at long last be achieved.

Presentations

Pleasing features of the luncheon recess were the presentations made by David Forgan to Miss L. Hutt and Leslie A. Catchpole. On retirement Miss Hutt was presented with a beautiful bouquet of roses, while "something more tangible" awaited her on her arrival home. Mr. Catchpole, after 25 years with the Construction Department, was the recipient of the customary sealed envelope whose contents are always a pleasure to contemplate. Mr. Forgan also referred to another presentation which had been made earlier to Jim Scott, former superintendent at Kipling Avenue. Mr. Scott, who was unfortunately confined to his bed, was presented with a television set to help while away the hours, while to Mrs. Scott went a suitable tribute of roses.

The convention concluded with a banquet at which the principal speaker was D. L. Dolan, Director of Travel and Publicity for the Dominion Government. Introduced by Commission Chairman Robert H. Saunders, Mr. Dolan won frequent plaudits from his audience during an unusually interesting and instructive address. He referred to Canada as the country where one experienced more of the good things of life and less of the bad things of government than in any other country in the world. One of the good things was electricity. Canada had a wonderful commodity to sell and he hoped that every Canadian would make a point of giving it the fullest publicity.

SAVED FELLOW EMPLOYEE'S LIFE



ENGAGED ON tree trimming near Beamsville, Ontario, Stephen Soltesz, a young employee of the Davey Tree Expert Co. of Canada, lost his balance and touched a 4,000-volt power line. Prompt action on the part of one of his fellow employees helped to save his life, and on this incident being reported to the National Safety Council of Chicago, the man's rescuer, Robert M. Barr, was awarded the Council President's medal. Presentation of the medal, shown above, was made by Wills Maclachlan, Secretary-Treasurer and Engineer of the Electrical Employers Association, at a dinner arranged by Owen L. Hawkey, Manager of the Davey Tree Expert Co. of Canada. Certificate accompanying the medal is also shown.

HT—Hydro Chair-
n Robert H. Saun-
s and Miss Betty
open Annual
chandise Show.

—General view
delegates crowd-
in to see attrac-
displays at the
w in Toronto.









MANY DELEGATES visited the Ontario Hydro exhibit.

EXPRESSING optimism concerning the future power supply situation in Ontario, Hydro Chairman Robert H. Saunders told the Canadian Association of Radio and Appliance Dealers that within the very near future, they could sell their products with the assurance that the people would be able to use them "to their heart's content."

When opening the Seventh Annual Merchandise Show at the Royal York on April 3, he stated that with the placing in service of the first two units at the new Des Joachims Development on the Ottawa River early this summer, 89,520 kilowatts (120,000 h.p.) would be added to the Hydro's resources. The remaining units would come into operation progressively and by the end of the year, it was expected, that the entire output of the plant would be available — 358,000 kilowatts (480,000 h.p.). It was also expected that initial deliveries of power from Chenaux would be made in December of this year.

With this additional power, he said, it was not anticipated that there would be any restrictions this year, nor did they anticipate any cut-offs, and it was thought that there would be a sufficient supply of electrical energy for domestic consumers until the Fall of 1953 or 1954.

By 1954, he said, it was hoped that

(Continued on page 19)



Historic Event

Agreement Formally Transferring Canadian Water Rights In Niagara River To Ontario Signed By Prime Minister St. Laurent And Premier Frost



HYDRO CHAIRMAN Robert H. Saunders (standing) and Louis S. St. Laurent, Prime Minister of Canada (left), watch as Premier Leslie M. Frost of Ontario appends his signature to Agreement, shown ab

SHORTLY after 11 o'clock on the morning of Monday March 27, 1950, two smiling men stepped briskly into the cabinet room of the Ontario Legislature. Under the relentless glare of movie floodlights and while the bulbs in a battery of press cameras flashed, the two sat down at the top of the long shining table where a number of documents had been placed. As cabinet ministers, government officials and newsmen crowded round to watch, the two reached for pens and appended their signatures to the documents.

Standing immediately behind the two, Hydro Chairman Robert H. Saunders smiled as the pens were replaced in the desk set.

The signatures read: "Louis S. St. Laurent" and "Leslie M. Frost."

It was a happy, historic and symbolic event.

It was a happy event for Hydro because the document which had been signed by Louis S. St. Laurent, Prime Minister of Canada, and Leslie M. Frost, Premier of Ontario, represented an agreement between the Dominion and Provincial Governments, formally transferring Canadian water rights in the Niagara River to Ontario. This agreement will enable the Ontario Hydro to proceed with the development of 800,000 additional horse power at Niagara once the Diversion Treaty, signed by Canada and the United States at Washington on February 27 has been ratified by both the U.S. Senate and the Canadian Parliament.

The signing of the Treaty and Agreement climaxes many months of negotiations in which Chairman Saunders has been actively engaged at both the Canadian and U.S. capitals.

Replacing existing treaties, the new Treaty covers a 50-year period and governs increased diversion of water at Niagara Falls for power purposes. It guarantees an adequate flow of water over the Falls to maintain their scenic beauty with the remaining water being utilized to generate more electricity.

It was an historic and symbolic event in that Prime Minister St. Laurent took time out to go to Queen's Park to sign the Agreement instead of following the traditional practice of conducting such a ceremony at Ottawa. (As far as this writer can recall, it is something like seventeen years since a Canadian Prime Minister visited Queen's Park. The Prime Minister at that time was the late (Viscount) R. B. Bennett.

Following the signing of the Agree-

(Continued on page 19)

Hydro Officials, Staff Praised by Challies

Tells Ontario Legislature Problems Of Past Year Dealt With In "Faithful Creditable And Efficient" Manner In Report On Hydro

"FAITHFUL, creditable and efficient" were the words used by Hon. George H. Challies, M.L.A. (Grenville-Dundas) and First Vice-Chairman of the Commission, when directing attention to the work of the Ontario Hydro officials and staff and the way in which they had dealt with "the problems arising during the difficult months of the year now past."

Mr. Challies made these observations wnen reviewing the progress and affairs of Hydro in a report presented in the Ontario Legislature recently.

No report on the activities of Hydro during 1949, he said, would be complete without an expression of the Government's thanks and appreciation to Robert H. Saunders, the Hydro Chairman, for his "energy and resourcefulness." It was also fitting, continued Mr. Challies, to refer to the able assistance rendered by W. Ross Strike, K.C., the Second Vice-Chairman. The latter, he stated, because of his many years of municipal commission experience gained as President of the Eastern Ontario and Provincial Municipal Electric Associations, was specially equipped to be of service to the Commission and to the municipalities.

The Government and the Commission, said Mr. Challies, extended their thanks and appreciation to R. L. Hearn, the General Manager and Chief Engineer, the two Assistant General Managers — Dr. Otto Holden (Engineering) and A. W. Manby (Administration) — and "all the loyal staff of the Commission."

"We are hoping," declared the First Vice-Chairman, "that the most difficult days are now over, and while, no doubt, there will be many problems to face, I believe, we can look forward with renewed confidence to the year that lies ahead."

Referring to the Niagara Water Division, Mr. Challies pointed out that after two years of effort a treaty to permit greatly increased diversion of water for power had been signed by Canada and the United States and now awaited ratification. The speaker paid tribute on behalf of the Commission to Prime Minister Leslie M. Frost, the Hon. L. B. Pearson, Secretary of State for External Affairs; His Excellency, H. Hume Wrong, Canadian Ambassador to the United States, and members of their staffs for their valuable assistance in this matter.

Speaking of the St. Lawrence River Power Development, Mr. Challies said the Commission regretted that the 2,-2,200,000 horsepower available on the St. Lawrence should remain unutilized. The history of that projected development, Mr. Challies remarked, was largely a record of frustrating moves and continual postponement of a worthwhile and necessary project. "Surely," the speaker said, "when it comes to the question of developing the St. Lawrence River, the interests of Ontario and the adjacent states should predominate over faraway places." Mr. Challies then assured the house that the Commission would continue its effort to secure permission to proceed with the development of the St. Lawrence.

Discussing the Commission's Construction Program, the speaker stated that meeting increased demands for power by industries, homes, stores and farms, and also providing an adequate reserve, had been a major problem for the Commission since the end of the war. In this connection, Mr. Challies said, that Hydro could look back on a period of unprecedented development in the construction field.

Analyzing these achievements Mr. Challies said that during the past twelve months work has been carried forward at no less than five Hydro developments, representing a total power production capacity of 784,000 kilowatts, or approximately 1,050,000 horsepower. The speaker also pointed out that the power development at Des Joachims would commence to deliver power during the current year, and that the whole development would be completed by the end of the present year or early in 1951. He also commented on the development at Pine Portage, which would contribute to the load for the lakehead cities. The Tunnel Development, on the Mississagi River, he continued, was now nearing completion and would augment the power supply in the Northeastern Region.

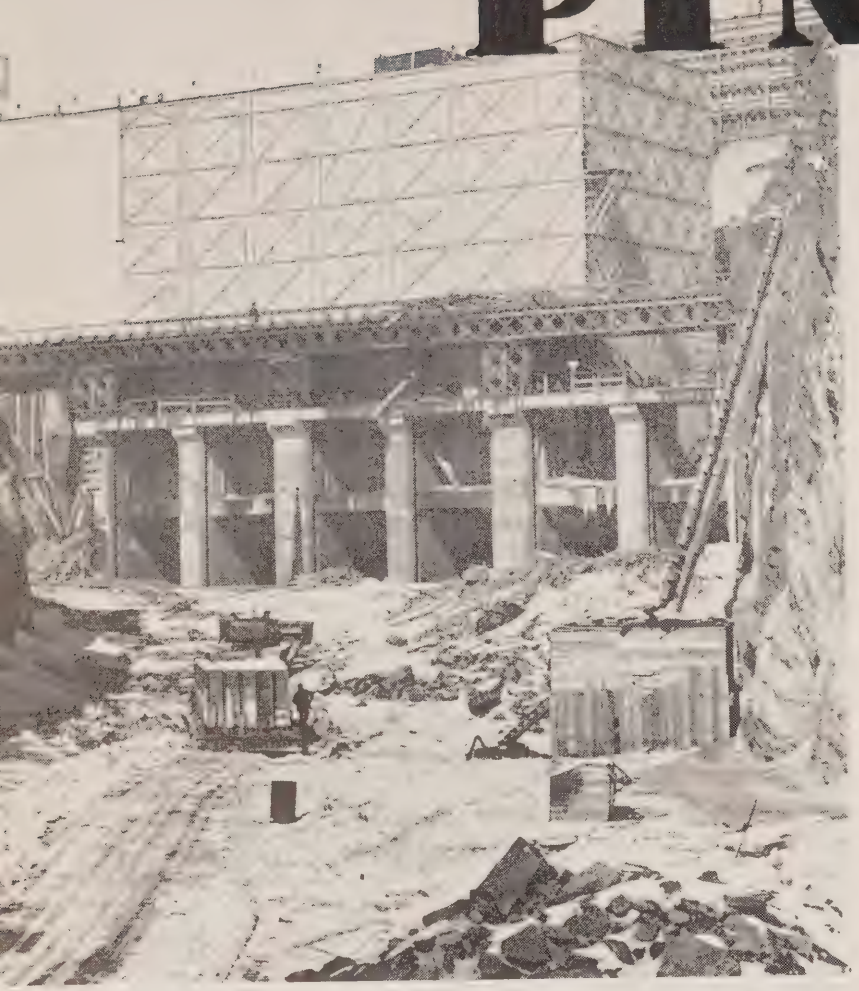
Turning to Rural Construction, Mr. Challies stated that the program for the current fiscal year called for a total expenditure of $17,270,000 including the

(Continued on page 27)



FOLLOWING THE signing of the Agreement, Hydro News' photographer got this picture of the group in attendance at the ceremony. Left to right (standing): Hon. George H. Challies, Hydro's First Vice-Chairman; Hon. Louis P. Cecile, K.C., Minister of Travel and Publicity; Hon. Charles Daley, Minister of Labour; Hon. George H. Dunbar, Minister of Municipal Affairs; Hon. Harold R. Scott, Minister of Lands and Forests; Hydro Chairman Robert H. Saunders; Hon. William A. Goodfellow, Minister of Public Welfare; Hon. Welland S. Gemmell, Minister of Mines; Hon. Arthur Welsh, Provincial Secretary; Hon. William Griesinger, Minister of Planning and Development; Hon. Thomas L. Kennedy, Minister of Agriculture; Hon. William E. Hamilton, Minister of Reform Institutions; R. Marjoribanks, Canadian Press; Don O'Hearn, President of Queen's Park Press Gallery; Dick Sheridan, *The Globe and Mail*. Seated: Prime Minister Louis St. Laurent; Hon. Leslie M. Frost, K.C., Premier of Ontario and Hon. George H. Doucett, Minister of Highways.

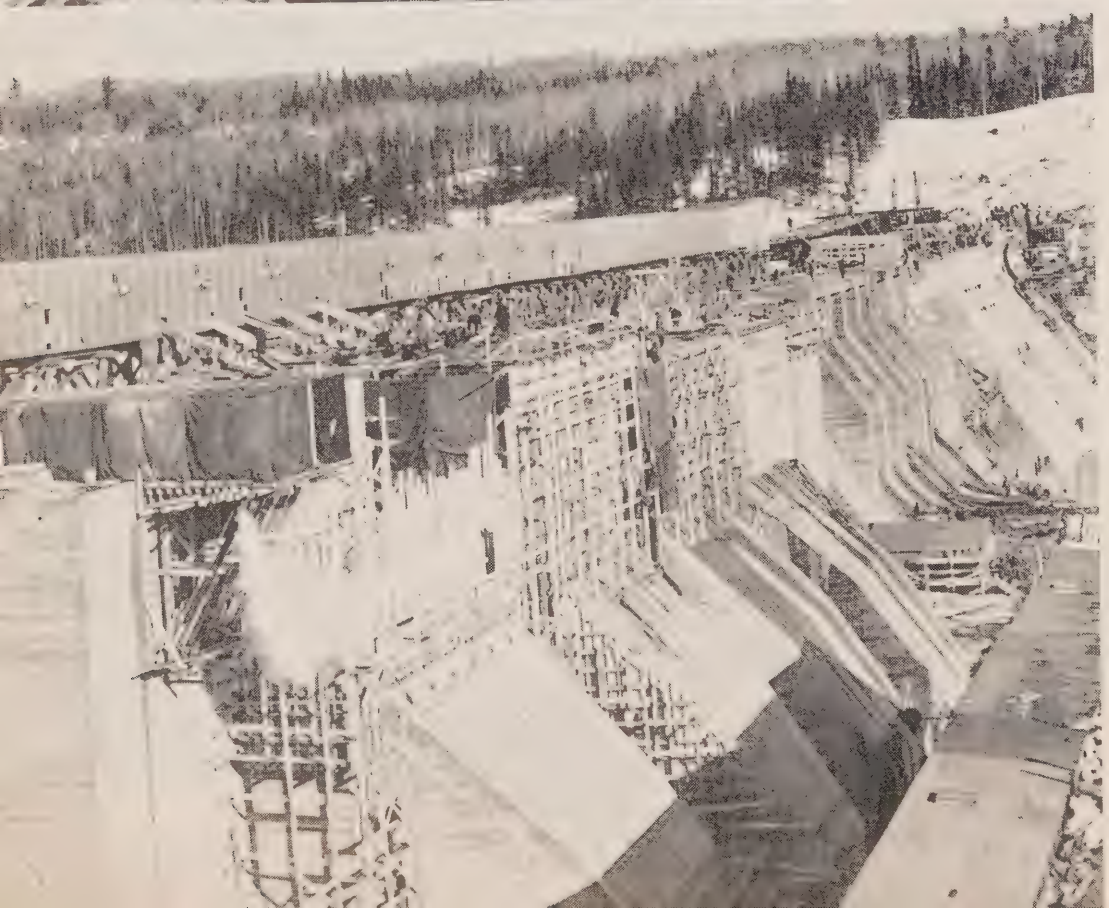
PINE P



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The latest photogra
News' photographer Bob
succeeding pages. Snow



TOP LEFT: View of
tailrace excavation, lo
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structure is the tempor
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BOTTOM LEFT: An arr
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stream face of the
Portage dam is given
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ORTAGE

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20,000 kilowatts (160,000

t Pine Portage by Hydro
are shown on these and
the ground at the time.



TOP RIGHT: To pass down-stream an estimated half-million cords of pulpwood and saw logs per season, this log slide, some 750 feet long, is being built on the east side of the river.



BOTTOM RIGHT: View of the downstream face of the Pine Portage dam, showing sluiceways and headworks. The dam's approximate length will be 3,000 feet; maximum height 140 feet.

LEFT: Taken from the top of the dam, looking downstream, this photograph focuses attention on the steel structures for outdoor high tension switching. The boiler house, mixer plant, concrete conveyor and other construction facilities are also shown.

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GHT: Photographer
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HISTORIC EVENT

(Continued from page 14)

ment, Prime Minister St. Laurent said it was "a great delight" to have a part in the negotiations to make available more water at Niagara Falls. That additional water would serve to create new wealth and new opportunities for bettering living conditions in Canada, he said. "Of course," he smiled, "This happens to be in Ontario. But this is Canada. We are very much concerned with developments taking place anywhere in this great country, from one ocean to the other."

Premier Frost said that the Ontario Government appreciated the co-operation of Prime Minister St. Laurent and his Government. "It was a very generous gesture," said Mr. Frost, "for Mr. St. Laurent to take time out to come here today. It was a fine goodwill gesture to the Province of Ontario."

MERCHANDISE SHOW

(Continued from page 13)

more power would be available from the new Niagara Development. "With this in mind," Mr. Saunders said, "we, at Hydro, are optimistic about the future."

He expressed appreciation for the splendid co-operation on the part of the appliance dealers in helping conserve power during the recent shortage.

The heavy agenda of the three-day convention included many interesting panel discussions on selling, advertising, promotional activities, television and others. One of the main features on the program was the Merchandise Show and the delegates crowded in to see the various displays which ranged from television sets to ultra modern sewing machines. The very latest in electrical appliances was arranged in attractive booths. These included radios, washing machines, refrigerators, vacuum cleaners, floor polishers, electric blankets, irons, toasters, coffee makers, kettles and other appliances.

"CAREFUL AND CONGENIAL"

L. G. Geddes, Superintendent of Plants, Union Gas Company of Canada, Limited, has taken time out to write a letter of appreciation to H. H. Snyder, Area Project Manager, Frequency Standardization Division at Sarnia. Commenting upon change-over operations at the Refinery Still Gas Plant, Sarnia, he said that the men of the Comstock Company (the Commission's contractors in that area) had done their work in a thorough and capable manner. "At all times," wrote Mr. Geddes, "they were very careful and congenial. They seemed to have the interests of our company in mind at all times. We understand that this was the first major industrial job done in this district, consisting of approximately 106 items."

RED SHIELD APPEAL

"MEETING Human Need With the Helping Hand" is the inspired slogan which is featured in the Salvation Army's 1950 national Red Shield Appeal, which opens on May 1, and runs until May 22.

The appeal is aimed at helping the more than 100 social service institutions which the Salvation Army maintains. These services include: General and Maternity Hospitals; Sunset Lodges for Aged Women; Children's Homes; Men's Hostels; Family Welfare Services; Missing Person's Bureau; Fresh Air Camps; Prison and Police Court Work and many others.

Every year in Canada this "Helping Hand" is conveying hope and encouragement to people in all walks of life, and the Salvation Army is thus appealing to everyone to support and further this well-deserving cause.

S. R. WAGGONER DIES

STEPHEN R. WAGGONER, Superintendent of Electrical Inspection in the Eastern Region, died recently at his home in Ottawa.

Mr. Waggoner had been on the Commission's staff for more than 35 years. He was born and educated in Ottawa. Closely identified for many years with fraternal organizations, he was a member of the Dalhousie Lodge No. 52 of Masons, held membership in the Chapter and Preceptor, as well as Rameses Temple of Shriners and the I.O.O.F. He was a former president of the Shriners Club. As a Shriner, Mr. Waggoner took an active interest in the group's work among the crippled children of the Ottawa area.

He is survived by his widow, the former Mary Kavanagh, and a brother, William.

If your neighbour insists on keeping the radio blaring until 2 a.m. why not give him a ring at 4 a.m. and tell him how much you enjoyed it.



H. S. WEPPLER



W. M. GRUNDY

TWO new appointments — Harvey S. Weppler, to the position of Meter, Relay and Communications Engineer — Operations, and William M. Grundy as Chief Forester — were announced recently by J. M. Hambley, the Commission's Director of Operations.

Mr. Weppler, who joined the Commission as Meter Engineer upon graduation from the University of Toronto in 1916, was Assistant Meter and Relay Engineer prior to his latest appointment. He succeeds D. A. McKenzie who passed away a few months ago.

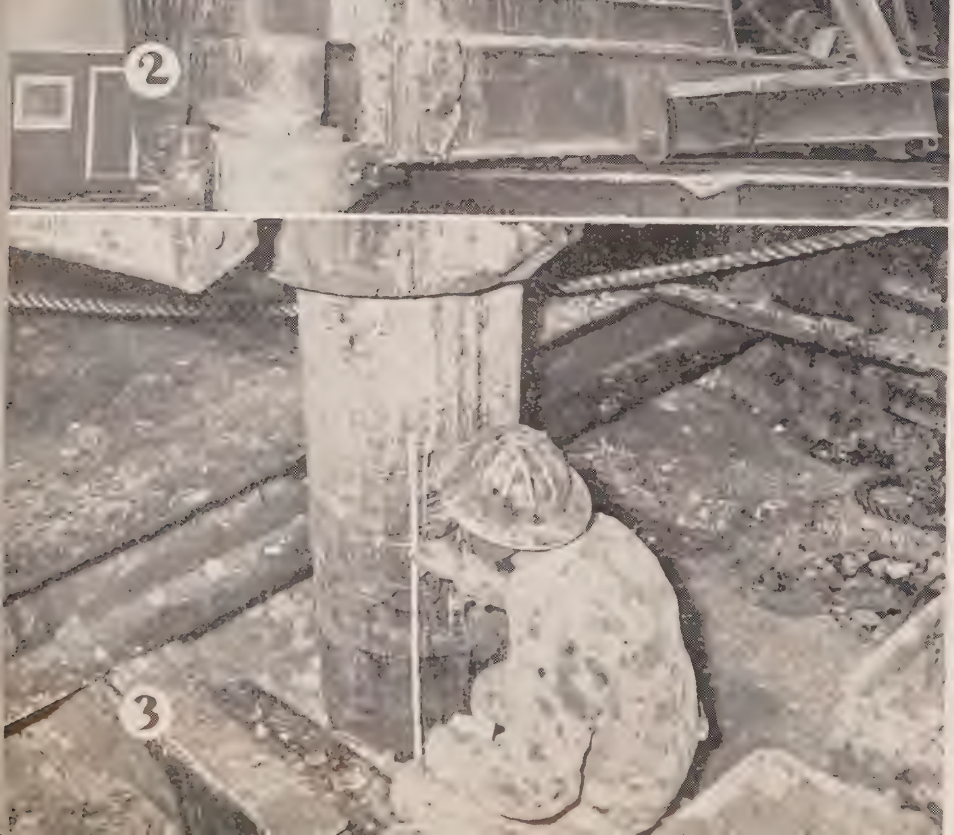
Mr. Weppler has served as Field Meter and Relay Engineer in many districts of the Niagara, Georgian Bay and Thunder Bay systems. In addition to the position of Assistant Meter and Relay Engineer at head office, he also served as Assistant System Operating Engineer for the Thunder Bay System.

He is a member of the Ontario Association of Professional Engineers and of the American Institute of Electrical Engineers.

Mr. Grundy, the new Chief Forester, succeeds W. Ray Hunter, who has retired. Mr. Grundy, a graduate of the Davey Institute of Tree Surgery, Kent, Ohio, was identified with the field staff of the Davey Tree Expert Co., before joining the Commission in 1930 as Forestry Field Superintendent. He was later promoted to the position of Assistant Forestry Superintendent. When the reorganization of the Commission took place in 1947 he became Assistant Chief Forester, a position he held until his latest appointment.







Safe

by

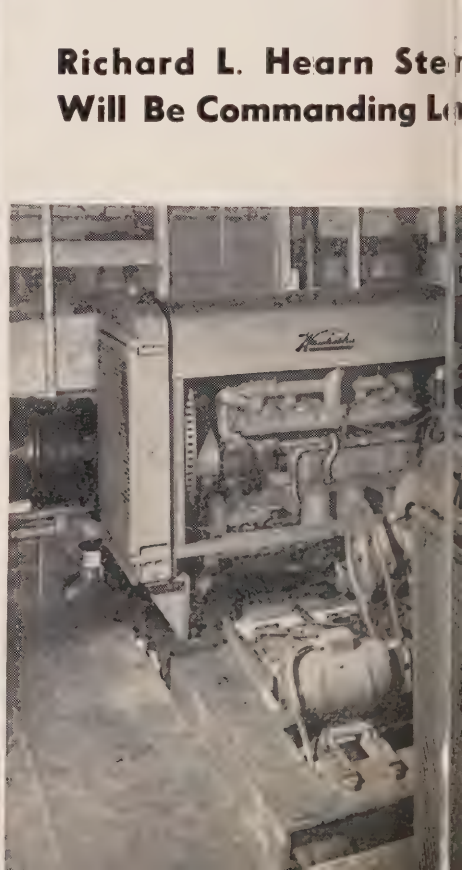
Harry M. Blake
Hydro News

WHEN the Richard L. Hearn Steam Electric Generating Station is finally completed next year it will be a commanding landmark on Toronto's eastern waterfront and, at the same time, will rank among the most rugged structure of its kind from the standpoint of construction.

Photographs reproduced on these pages focus attention on some of the important operations involved in laying the foundation for this station whose capacity will be 200,000 kilowatts (268,000 hp).

Before any construction was undertaken, the soil conditions were thoroughly investigated and it was decided that concrete piles should be used. These were driven down into the layer of incompressible sand underlying the surface soil or organic clay, fine sand and gravel in such a way that the concrete base mushroomed out to hold like the fluke of an anchor in a lake or ocean bed. There are about 1,800 of these concrete piles. They will support the large power house building, and the massive turbine generators and scarcely less massive steam generators which will be fitted into their special places in the substructure.

Richard L. Hearn Ste Will Be Commanding L



horage

The piles were driven by means of a cylinder and close-fitting plunger. This was the procedure:

Before the piles were driven, their carefully surveyed locations were marked by pegs surrounded by a mound of cement. The cylinder (1) was then brought into line and carefully centred over the peg. Shoving downward the peg and the concrete around it the cylinder and plunger (2) were driven into the ground until (3) a depth of approximately 25 feet had been reached. After having been driven down to the required depth, the plunger was removed and the now hollow cylinder was partially filled with concrete from (4) a charging bucket. The plunger was then replaced in the cylinder on top of the freshly-poured concrete and (5) consolidated by blows of the hammer as the cylinder was drawn slowly upwards. This operation of pouring and consolidating was continued at intervals until the pile had been completed. Conveyance of the concrete from the mixing plant to the pile-driver was by gasoline-driven buggy which dumped the concrete into the charging bucket (6) which in turn emptied it into the cylinder.

While steam was used for the pile driving, some electric power for general construction purposes at the Toronto station is furnished by (7) two 60-kilowatt diesel generators.

ic Generating Station
On Toronto's Waterfront











CONSUMER SERVICE problems were being "ironed out" by this group caught by the cameraman in a serious discussion. Area Managers Harry Dunfield of Kirkland Lake, left, Alvin Wood, of Manitoulin, second from right, and Ken Phoenix, right, consulting with Ken. Sitzer, Hydro's newly appointed Acting Assistant Director of Consumer Service. This subject and Consumer Service inspections were dealt with at the two-day meeting.

"WORTHWHILE EXCHANGE"

Conference Of Hydro Regional And Area Managers Acclaimed "Thorough Success"

ACCLAIMED as the "most constructive Area conference yet held," the two-day meeting of Hydro's Area and Regional Managers at the Royal York Hotel, March 16 and 17, was unanimously voted a thorough success. The reaction of the Area and Regional Managers was summed up by L. D. Pengelly, Area Manager of Woodbridge, who acted as chairman for the final session.

"It was our conference from start to finish," he said. "All of us received a great deal of benefit from the worthwhile exchange of information and ideas this year."

H. D. Rothwell, the Commission's Administrative Assistant—Regions, acted as general chairman, with Regional and Area Managers acting as chairmen of the various sessions included on the agenda of "a shirt sleeve conference."

The pattern of the proceedings was set by the Hon. George H. Challies, M.L.A., Hydro's First Vice-Chairman, speaker at the opening day's luncheon, who invited the Area Managers to offer freely any constructive suggestions.

Mr. Challies told the Area Managers that they have been "doing an excellent job," especially during the past five years when there had been difficult power shortages. "I want to congratulate you, not only on behalf of the Hydro Commission, but also on behalf of the Ontario Government. All parties in the Legislature recognize that an excellent job has been done for the rural parts of this province," he added.

The First Vice-Chairman said that in five years, from 1944 to 1949, a total of $49,500,000, had been spent in rural Hydro extensions. Government aid, he said, amounted to $24,500,000. The capital expenditure on rural line extensions to date amounted to $89,000,000. The sum total of energy used on rural lines in 1949 was equal to the combined load of 10 cities, Brantford, Guelph, Kitchener, Oshawa, Owen Sound, Peterborough, Port Arthur, St. Catharines, Sarnia and Sudbury.

Referring to rural line construction, Mr. Challies advised the Area Managers to point out to farmers that if the lines could be taken off the roads and placed on their land, this would eliminate the tremendous cost of tree trimming. At the same time, it would eliminate many of the difficulties sometimes caused by branches and trees falling on lines during sleet storms.

Mr. Challies revealed that while the consumption of power had increased 38 percent, from 1939 to 1947, revenue per kilowatthour was down 15 percent. As an experiment in endeavouring to stimulate the use of electric power on farms, the Commission had decided to engage six O.A.C. graduates and give them Consumer Service training. They would then be attached to Area offices to discuss with the farmers the greater use of apparatus on the farm, both in the home and in the barn.

Doing Splendid Job

The speaker concluded by congratulating the Area Managers on the splendid public relations job that they have been

doing in the field in building good relations with rural consumers.

Many subjects were presented and thoroughly discussed during the eight sessions. These subjects ranged from general administration problems, to operations, accounting, personnel, engineering, Area and Regional administration problems, Consumer Service, and Consumer Service inspection problems. In addition, special topics, such as "Grounding of Farm Equipment and Special Hazards," were discussed. An informative talk on this topic was given by N.E. Macpherson, of Hydro's Consumer Service Division.

During the sessions, Commission representatives spoke briefly, dealing with specific problems, A. W. Manby, Hydro's Assistant General Manager—Administration, told the gathering that the Commission was concerned about rising costs. He warned that increased costs could only be met by passing them on to the consumers in the form of increased rates. Mr. Manby said that most municipalities realized that, and municipal Hydro officials had wondered how the Commission had been able to get along until now before having to increase rates.

Rural Line Construction

He declared that in order to keep down costs it was important that consideration be given to potential revenue as well as expense in relation to the supplying of power to new consumers.

He warned all Area Managers to be careful not to lead applicants for service to believe they were going to get service unless they (the Managers) had definite



"EXCELLENT JOB" was the tribute which Hydro's 1st Vice-Chairman, Hon. Geo. H. Challies, M.L.A., paid to the Commission's Area and Regional Managers.

advice that the line actually was going through. Mr. Manby said that potential consumers ought to be advised not to have their property wired until absolutely sure that the line extension was included in the program.

Dealing with one of the problems on the agenda, storage facilities, Mr. Manby said that during the course of the Frequency Standardization Program the Commission would be faced with the problem of providing storage for a short time. Wherever these storage facilities could be located in an area needing them and could be turned over to the area later for permanent storage, this would be done, he added.

Another problem referred to Mr. Manby, following a thorough discussion, was the question of use in Areas of radio-equipped trucks. It was pointed out by R. M. Laurie, Regional Manager, Western Region, that two-way radio communication was a great advantage. This had been established, he said, during the recent sleet storm in the Western Region. Several illustrations of the bene fit of office-truck radio communication were given and it was pointed out that valuable time, money and gasoline were saved in locating the trouble spots and in restoring service quickly.

Mr. Manby declared that management realized that there were distinct advantages in having radio-equipped trucks, and that radio was a useful and convenient tool in rendering better service to the public. He stated that a report had been requested on the use of radio in the Regions, and on the savings that could be effected by utilizing radio communication. When all the facts had been gathered, he said, an appropriation recommendation would be submitted to the Commission.

Accounting Methods

Considerable discussion took place on accounting methods. G. F. Davis, of the Commission's Accounting Department, introduced members of his staff who took part in a panel discussion on stores, stores accounting, salvage and other important matters.

One of the highlights of the concluding session of the first day was an inter-



"HOW ABOUT a light?" asks this group of Eastern Region Area Managers during their recent conference as G. H. Saunders of Perth, seeks to extend this courtesy to the popular Eastern Regional Manager, O. S. Luney, of Ottawa, seen seated in front, with his familiar cigaret holder.

esting and informative talk on "employee relations" by John Dibblee, Manager of Personnel.

Mr. Dibblee stated that today personnel was recognized as the "very heart and essence" of management. He said that Hydro is right up in the forefront in progressive employee relations in Canada.

"Outstanding Job"

Continuing, he said that the Dominion Government had complimented Hydro for the outstanding job that had been done in helping to make good citizens of new Canadians.

At another point, Mr. Dibblee told his audience that character was the key to sound human relations.

"When I stress the fundamental need for character," he said, "I do not belittle the need for competence."

Proceeding, the speaker declared: "The supervisor who does bring out man's best is not a patronizer, an appeaser or a driver. He is a leader. He infects others with the enthusiasm, satisfaction and joy that he finds in his own work. They catch his spark and a team is born.

"It is our job," continued Mr. Dibblee, "to build sound human relationships on the firm foundation of character, competence and care for people. As a by-product we can expect not less production, but more; not less work satisfaction, but more; not higher costs, but lower costs."

In concluding, the speaker said: "This Commission has already won world-wide recognition for mighty engineering achievements. I believe we are now face to face with the opportunity and the challenge to give equally outstanding leadership in the field of human relations, desperately needed to restore sanity and freedom throughout the world."



"LUCK OF the Irish" is the claim which this group of managers make for the small pot of shamrocks to which they proudly point. In the group, left to right, are Area Managers Alvin Wood, Manitoulin; Ken Phoenix, West Lorne; Roly Graham, Regional Manager, North Bay; Area Managers Cochrane Cunningham, Timmins; Clarence King, Dunnville; all wearing shamrocks.

At the evening banquet, Chairman Robert H. Saunders was the principal speaker. He paid tribute to the work of the Area Managers saying, "We have a job to do in Hydro—and you are doing a splendid job." He expressed thanks to the Area Managers and Regional Managers for their co-operation.

"The citizens of this province," Mr. Saunders added, "are entitled to electric power. Hydro is trying to treat every person in the same way—and I know the Area Managers are following that pattern."

The Chairman said that a decision has been reached about rural line construction. He said that some 3,100 miles of rural lines would be built this year. The Chairman added that the rural program



"BEGORRA, AND 'tis luck I'm givin' ye," Area Manager Monty Kaye, of Matheson, tells I. K. Sitzer, Acting Assistant Director of Consumer Service, as he presents him with a pot of shamrocks. Entering into the spirit of St. Patrick's Day during the annual Area Conference are these Irishmen, Area Managers Art Wellman, Fort Francis; Miller Johns, Tweed; Don Magee, Markdale, and Art Burleigh of Kenora.

would be maintained through next year and possibly the following year to catch up with the backlog.

"In the last two years, Hydro has set a tremendous pace to give service to people in the rural areas," he continued. "With over 3,000 miles of rural line extensions this year and for the next two years, we hope that we shall catch up. This is what we believe the people want and what the government of this province desires," he concluded.

Engineering problems were discussed at considerable length on the final day of the deliberations. Members of Hydro's research laboratory staff were present to reply to questions concerning some of the problems. Area and Regional administration matters also were thoroughly discussed.

The consumers' viewpoint was given to Area and Regional Managers and to officers of the Commission at the luncheon on the closing day. Speaker at that function was Gordon McGaven, of Walton, a leading farmer in Huron County. He was introduced as a man who has been keenly interested in mechanized farming, a plowing champion and a farmer often consulted by the Department of Agriculture on farm machinery design.

Reminiscing, Mr. McGaven recalled that his father had toiled throughout the day and often long into the night on the farm homestead. Farming, he said, was

(Continued on page 28)



REGIONAL MANAGERS took an active part in the discussions, at the Area Managers' parley. Here A. S. Robertson, Niagara Regional Manager, and O. S. Luney, Eastern Regional Manager, are shown discussing conference agenda.



"BEJABERS, AND it's real," cries Area Manager Monty Kaye, with delight as he proudly displays the small pot of Irish shamrock following a St. Patrick's Day presentation made by Hydro's Director of Consumer Service, M. J. McHenry. Enjoying Monty Kaye's witty remarks are V. Beacock, Consumer Service Engineer; G. McGaven, guest speaker; M. J. McHenry; R. Laurie, Western Regional Manager, and A. W. Manby, Assistant General Manager—Administration, and L. D. Pengelly, Woodbridge Area Manager. Is "Pen" about to give three cheers for the Irish?

Will Serve London Area

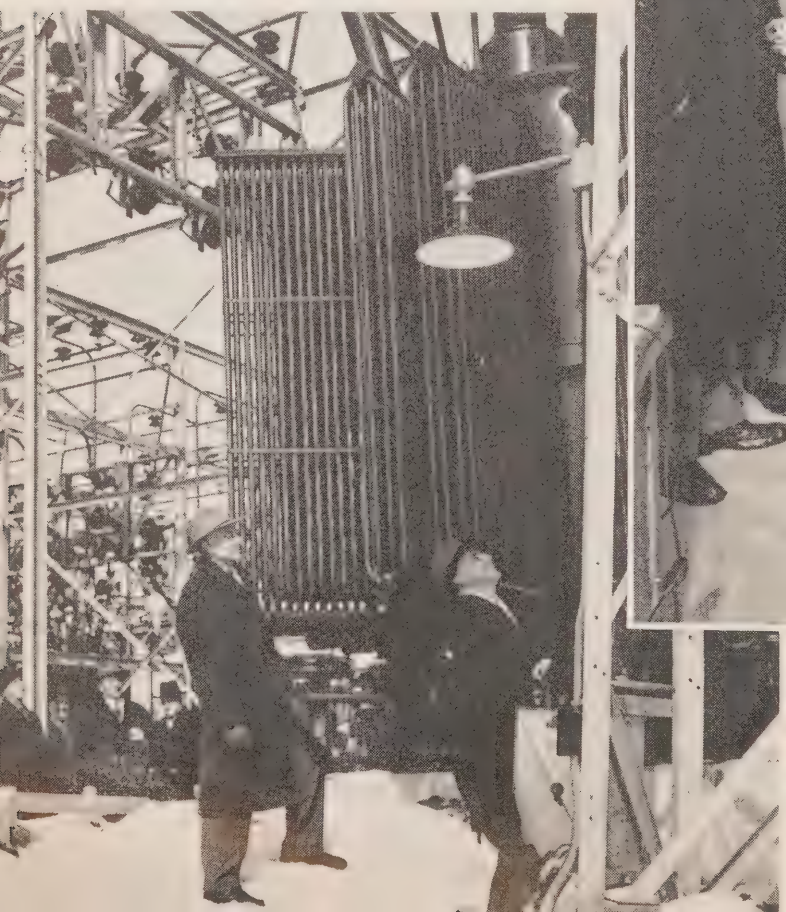
CONSTRUCTED at a cost of $1,000,000, the new Nels Street transformer station will provide 60-cycle power consumers in the London area as the equipment and applian of these users are changed over from 25-cycle to the n frequency. The new station, opened recently by Elmo Curtis, Chairman of the London Public Utilities Commissi consists of two banks of transformers, each of 28,000 kv ca city. Provision has been made for additional transformers wh required. All transformers and associated equipment are loca outdoors. Another feature is the provision of a grounded w suspended between two 100-foot towers as a protection agai lightning. The Nelson station is supplied with 60-cycle pow from the Westminster frequency changer station which recei 25-cycle power from Niagara and 60-cycle power from Polymer Company in Sarnia. Sixty cycle power will eventua be received directly from the Des Joachims development.

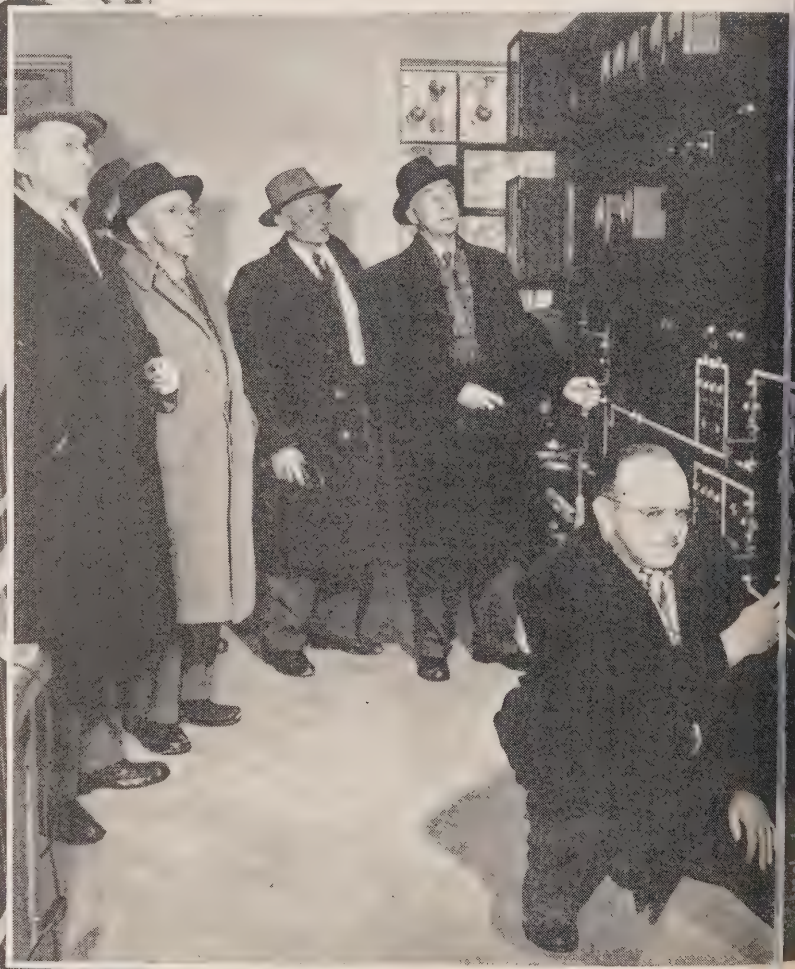
According to a recent survey, approximately 90,000 pie of electrically operated household appliances in the homes London's 23,600 domestic consumers will be changed over 60 cycle.



ABOVE—WORKMEN making final adjustments to disconnecting switches at the Nelson, T.S., which will provide for 60-cycle power to the London area.

BELOW—A. F. FERGUSON, Western Regional Operating Superintendent turns the wheel operating the brake which allows power to flow into the new $1,000,000 Nelson T.S. R. M. Laurie, Western Regional Manager stands behind.





ABOVE—E. V. BUCHANAN (top right), General Manager of London Public Utilities Commission, and Elmo W. Curtis (bottom right), Chairman of London P.U.C., throw feed line control switches to open new Nelson T.S. Others in the group are V. A. McKillop, Secretary, London P.U.C.; Cecil Ramey, Construction Superintendent of the Nelson Station; R. M. Laurie, Manager of the Western Region.

HYDRO OFFICIALS

(Continued from page 15)

Government grant-in-aid of $8,335,000. In all, Mr. Challies stated, the Commission planned to complete 1,825 miles of rural line extension, to which 4,480 consumers will be connected, and to add 26,837 consumers to existing lines this year.

Discussing Frequency Standardization, Mr. Challies said that the decision to standardize frequency in Southern Ontario, to conform to the frequency generally prevailing elsewhere in Canada, and the United States had been reached in 1948. A department had been organized by the Commission in August of that year for the purpose of carrying out this work, and during the past 18 months, up to the end of February of this year, the following had been accomplished: 12,301 consumers had been changed to 60 cycles. These comprised 11,444 domestic consumers, 698 commercial consumers and 159 power consumers. In all, he said, 22,572 kilowatts (30,096 hp) of demand had been changed to 60 cycles.

The estimated number of consumers whose equipment would be changed over to the end of December of this year, Mr. Challies told the members of the Legislature, was 85,326, comprising 77,916 domestic, 6,376 commercial and 1,034 power.

To Assist The Blind

AIMED at giving continued help to those who have lost their sight, and also aiding in the prevention of blindness, the Canadian National Institute for the Blind will launch an appeal for funds with the opening of its Annual Campaign scheduled for April 17th to May 6th.

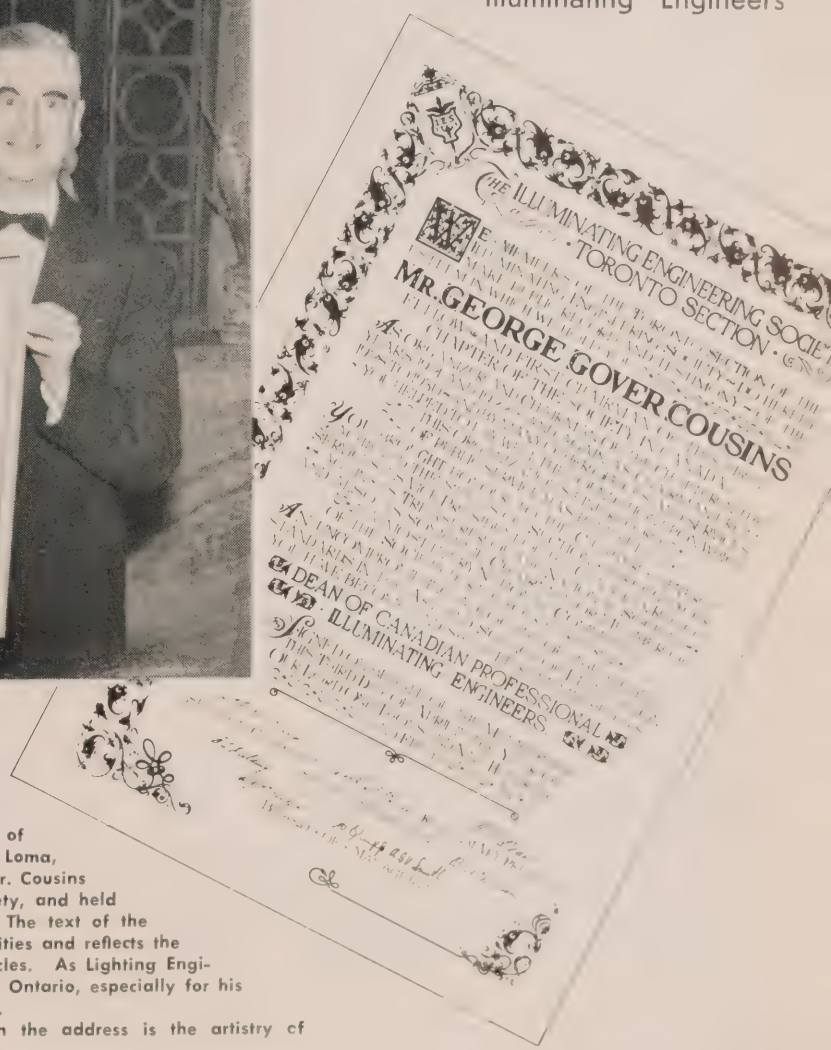
The basic policy of the organization is to train the blind for independence, or for that degree of independence of which they are capable. Once they have been trained, the Institute endeavours to find employment for them in its own factories, occupational shops, in industry or in the home.

The Institute is at present serving 17,000 blind persons across Canada, and there are thirteen residential centres across the country with services to meet varying needs.

To help maintain this vital work the Institute is in need of funds, which are raised through this annual campaign.

Honor "Dean" of Canadian Illuminating Engineers





EORGE GOVER COUSINS, who has been acclaimed as the Dean" of Canadian Professional Illuminating Engineers, is hown above receiving an illuminated address on the occasion his retirement from The Illuminating Engineering Society ter 30 years' active association. The presentation was made Franklin Dean (right), Vice-President of the Canadian Region of e I.E.S., and was incorporated with the dinner-ball held at Casa Loma, pril 3, in honour of all past Chairmen of the I.E.S. in Toronto. Mr. Cousins as the first Chairman of the first Canadian Chapter of the Society, and held fice during the years 1921, 1922 and again 1928 to 1930. The text of the ddress, in the photograph to the right, outlines some of his activities and reflects the ry high esteem in which Mr. Cousins is held in engineering circles. As Lighting Engier of the Commission, he is well known throughout and beyond Ontario, especially for his ork in school lighting research and street lighting applications.

(The multicoloured scroll work and other hand work on the address is the artistry of J. Birkenmayer, Toronto.)

NEW ERA

(Continued from page 6)

It is interesting to note that the first large substation constructed by the local commission in the central part of the city on Laurier Avenue is still in existence and that the bulk of the equipment installed in 1911, is still in service. In 1922, the second substation was constructed in the western part of the city, and in 1929, the first 110-Kv terminal station was installed by The Hydro-Electric Power Commission of Ontario in combination with the Ottawa Hydro.

In 1932 and 1937, additions were made to the distribution system by the construction of a substation in the eastern end of the city and the enlargement of an existing substation in the western section. Recently a second station was constructed jointly by Ontario Hydro and the Ottawa commission in the southern part of the city and a second 110-Kv supply point established, forming part of a 110-Kv ring around the city.

The extension of boundaries has brought the population of the nation's capital close to the 190,000 mark. It has also materially increased the responsibilities of the Ottawa Hydro-Electric Commission. At present the Commission is composed of Chairman F. H. Plant; Vice-Chairman, Mayor E. A. Bourque, and Commissioner N. B. MacRostie. With the experienced assistance of General Manager S. W. Canniff and Secretary-Treasurer W. Cecil Lewis, it may confidently be expected that the many problems of the day will be overcome and that a prosperous future will be the lot of the Ottawa Commission and its ever increasing number of consumers.

WORTHWHILE EXCHANGE

(Continued from page 25)

then a drudgery and the difficult working conditions drove boys from the farm. But today, electricity had lifted the burden from the farmers' backs and young men were staying on the farm.

The speaker recalled some of his experiences with home-made power generating equipment, and its failures and disappointments. He said that he had become convinced and "sold" on Hydro.

"There are a 'hundred and one' uses for Hydro on the farm," remarked Mr. McGaven. "But there is a serious lack of instructors who know anything about Hydro to tell farmers about it. Farm short courses, such as given at O.A.C., do not give the answers. Night class courses on farming have been organized but there is nobody to talk on Hydro. If Hydro could provide this service, it would be a great advantage to the farmers."

The speaker pointed out that wiring on farms after several years often deteriorated until bare wires were exposed. Many farmers believed, he claimed, that when wiring was installed and inspected it was good for a lifetime.

"But whenever there is a barn fire, farmers usually do not rebuild. They move to another farm and that is how consumers are lost," he emphasized.

Mr. McGaven suggested that Hydro representatives should visit farms and talk over matters such as wiring and other problems—not as inspectors but as friends. Farmers strongly disliked inspectors, and that often was a reason why many farmers did not seek to have Hydro installed on their farms, he added.

The cost factor was another point that the speaker mentioned. "It would be advantageous if the farmer could get someone, possibly a Hydro representative, to look over his property in advance and tell him how to install Hydro in the cheapest way to give adequate service. The farmer is at the mercy of the contractor and sometimes when the inspector checks it, the wiring is found to be wrong. It then must be changed, and that costs the farmer a great deal," he said.

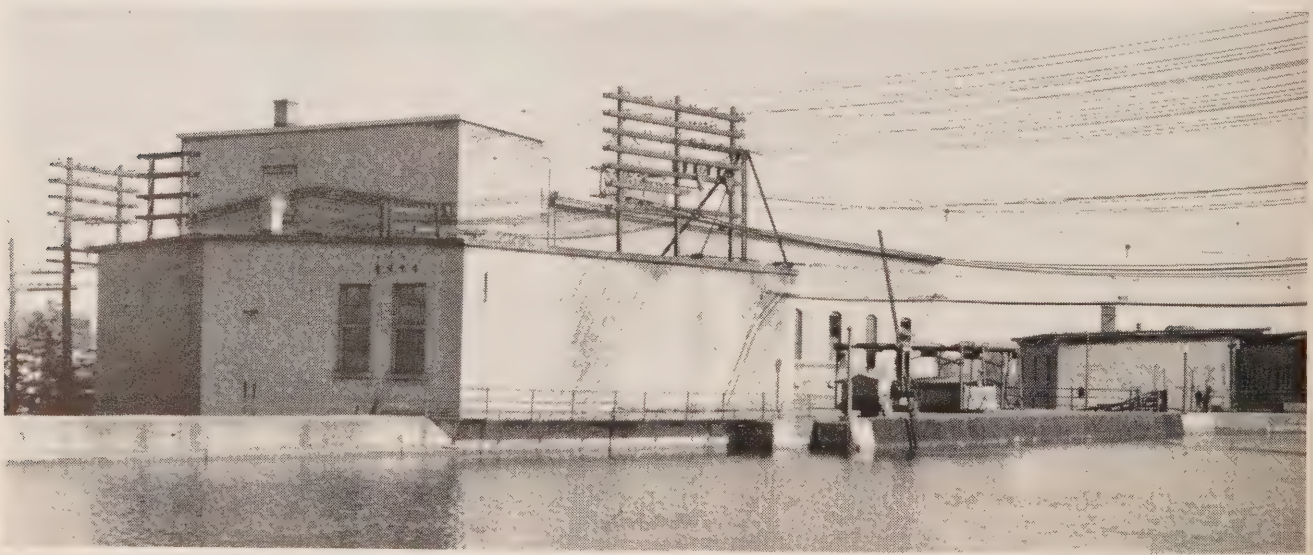
Concluding, Mr. McGaven emphasized that a helpful service would be rendered if farmers could be told how they could put in a lighting system or a heavy duty system to run their equipment, without a lot of frills.

Problems of Consumer Service and Consumer Service inspection occupied the attention of the Area Managers for the final sessions of the meeting.

Briefly referring to the value of the conference, M. J. McHenry, Hydro's Director of Consumer Service, told the Area Managers that they were the Commission's contacts with the consumers. No matter what the Commission did to create good public relations, he said, the success of these efforts depended on the Area Managers who had the close contacts.

Great Benefit From Conference

Mr. McHenry said that Head Office officers had obtained great benefit from the conference. He added that the suggestions advanced would be carefully studied, and although it was impossible to say whether all would be adopted for reasons of policy, nevertheless the proposals would be considered.

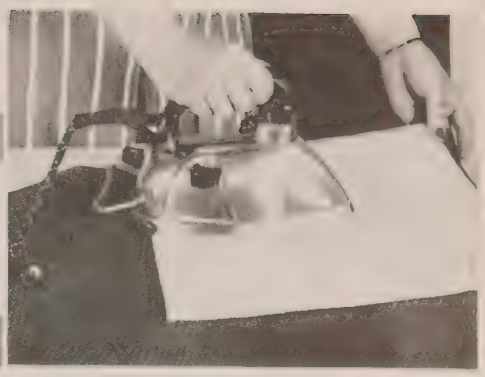


FOREBAY OF No. 2 powerhouse of the Ottawa Light, Heat and Power Company at Chaudière Falls. One of the oldest hydro-electric generating stations in Canada, this plant was taken over by the Ottawa Hydro-Electric Commission in January this year. Capacity, 4,875 kilowatts.

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



Did you know? . . .

The first electric appliance was an iron. It was introduced on the market in 1892. Other electric appliances were first manufactured in this order: In 1901, the first toaster; in 1906, the first washing machine and mangle; vacuum cleaner, 1907; range, 1910; refrigerator, 1914; dishwasher, 1917; clock, 1920; mixer, 1922; radio, 1927; roaster 1933 and in 1937, the blanket.

* * *

The new rings around many electric elements are polished steel instead of chromium-plated metal. This means there will probably be less damage to these parts.

* * *

An automatic time-clock may be attached to many electric ranges for a small additional cost. Such a device is a boon to the career homemaker as well as the busy housewife. The meal can be put in the oven and set to cook at the appointed hour and will automatically turn off at the time allowed.

* * *

Which automatic electric toaster would you rather have? . . . the one which pops toast up, or the one in which the toast slides down when golden brown? If the bread used is of close texture and cold, the slices will toast evenly and pop up without warping around wire, but if bread is kept moist and is sliced thin, then the toaster which allows toast to fall down is best.

* * *

Modern laundry trends indicate that extracting the water from fabrics is most successful by spin dry method. With this method the fabric may not be as dry, but the clothes are never torn nor are the accessories such as buttons and zippers damaged as sometimes happens when clothes are forced through the wringer.

* * *

Check the type of ballast or the amount of top pressure in the washing machines where "wringing" action is automatic.

An electric steam iron should rest on an elevated stand or on end. If you leave it flat on the asbestos pad for too long a period, the steam builds up too much pressure. Use distilled water obtained from druggist or service station, or save the water collected from the refrigerator freezing unit as it defrosts.

* * *

There are shields for lumiline lamps which direct the light on the mirror at the sink and yet provide enough light in the area.

* * *

Parchment shades for table lamps are very popular and the inside is white, as it should be, while the outside colouring is vivid.

* * *

When lamp bulbs look black at the ends, it is time to change for a new Hydro lamp. Buy frosted glass unless the fixture is enclosed.

* * *

To clean and season the griddle, use a salt bag. You may tie table salt in a cheesecloth bag and rub off any fragments and season the iron to induce an even golden brown colour.

* * *

To prevent soggy pancakes, partially roll up the cake and spear with a toothpick or stand on end for stacking.

* * *

Looking for variety in pancakes? You can mix batter into finely chopped apple; drained, crushed pineapple; canned, kernel corn; chopped peanuts; seedless raisins; grated cheese. You can also cook plain batter spread with jelly, chopped bacon, or cheese, and roll up to serve.

* * *

Wafer cookies are more easily sliced from refrigerator dough with a cheese slicer than with a knife. Using this method you will have thinner and better shaped cookies.

* * *

Sprinkling aid: I find that an empty glass bottle with a metal top can be easily punctured with a small nail and then used as a sprinkler for dampening clothes evenly.

Convenient clothes rack: Bend one end of a large metal shelf brace and mount it upside down on the inside of a closet door or on one side of a clothes closet. Allow space for hangers to be placed on it, within easy reach.

* * *

Pickle relish and bacon will take away the prominent flavour of liver that many people find objectionable. Did you ever try liver and bacon in split hamburger buns with prepared mustard?

* * *

We have recently tried a few sweet treats made with corn syrup. There are a number of sugar-saver ideas which can be used these days. Economy is only shown in the budget when you keep the syrup at room temperature and measure it accurately, however. Grease cup or spoon to measure.

* * *

A shabby umbrella does not make things any brighter on a rainy day. We suggest you brush your "gamp" with a solution of ammonia and warm water.

* * *

If homemakers, when their scissors become dull, would try to cut the neck off a bottle with them, they would be surprised at the improvement in the scissors.

* * *

It will soon be "awning" time. When you put them up and then see — ah, me — a small tear or two, cover the split on both sides with celluloid tape before the wind makes the tear worse.

* * *

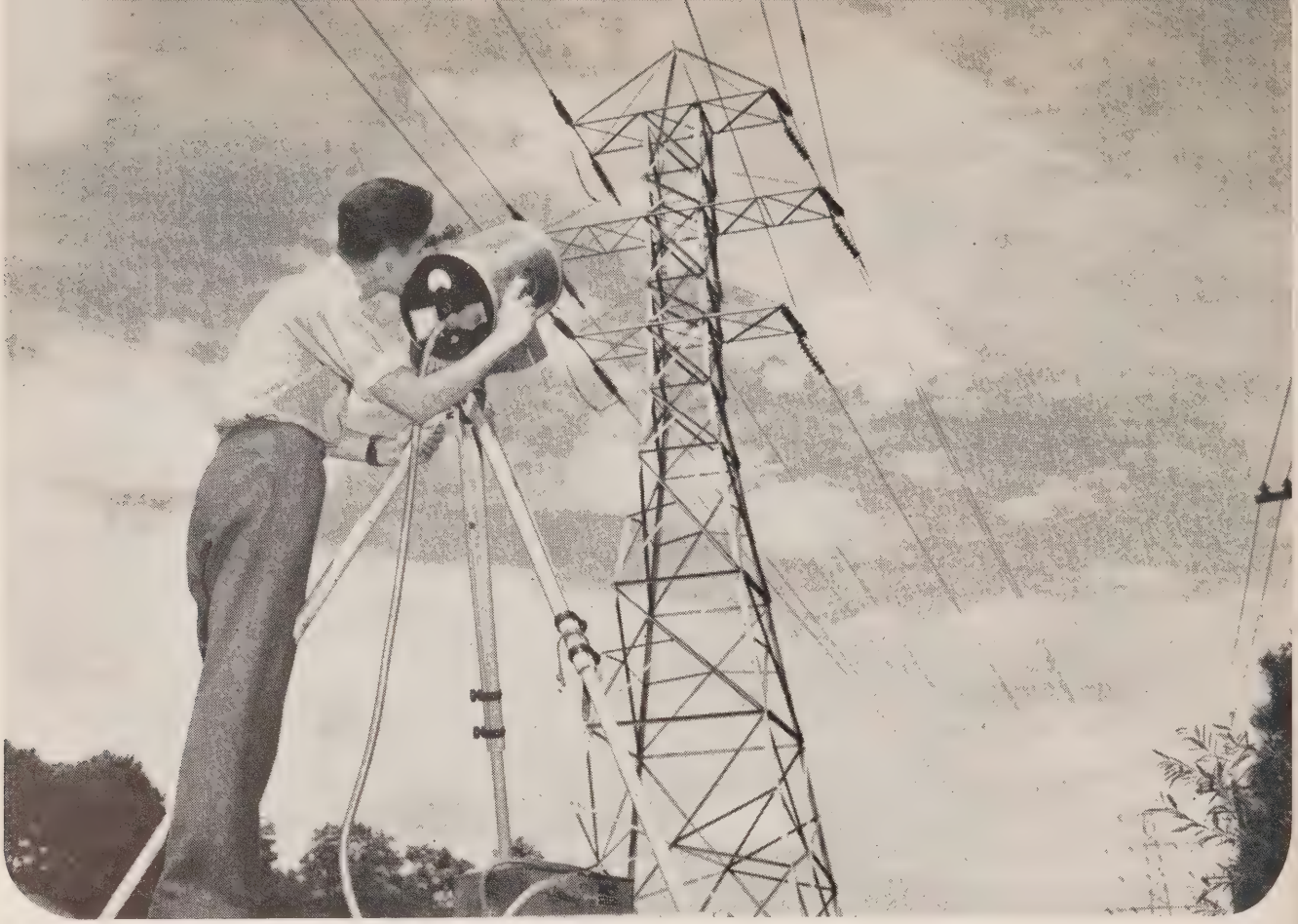
If you haven't any brush cleaning powder to soften paint brushes, boil them in vinegar.

* * *

The paperhanger's paste never smells particularly sweet to us until we add a few drops of oil of peppermint.

* * *

When you are refurnishing your kitchen, consider the new rubber coated trays, racks or heat-resistant pads. They save time and expense in many instances.



TELESCOPE SIGHTED on one of the two transmission line joints (bulges in wire) just at the right of top centre, this operator is about to take a reading on the bolometer, cylinder-shaped object atop tripod. Adapted from a war device by radar experts in Hydro's Strachan Avenue lab, bolometer is used to detect overheated joints by means of infra-red radiations.

IN SEARCH OF RESEARCH

HEAT difficulties are not confined to bursting thermometers and wilting geraniums, at least so far as the Commission is concerned.

Until a short time ago, overheated joints in transmission lines constituted a far greater problem than a run-of-the-mill difficulty such as those mentioned above.

Gradually, over a period of years, the current-carrying properties of these joints deteriorate. If this deterioration is not detected, the connection eventually fails altogether and the line may eventually fall to the ground, cutting off delivery of power until the fault is located and repaired.

Much inconvenience to consumers is caused by a breakdown of this kind, and often considerable time is lost in locating the cause of it. Research men at Hydro's Strachan Avenue Lab, always on the lookout for methods of improving Hydro service, took note of the problem several years ago and determined to remedy it, if at all possible.

The result of their efforts, especially the efforts of Jack Leslie, research engineer at the lab, is the Bolometer, an extremely sensitive device which detects an overheated joint by means of the infra-red rays it emits.

At first sight, the bolometer looks simple. Its essential parts number only two — a parabolic mirror which collects the rays radiated from the joint, and a heat-sensitive element mounted at the focus of the mirror. The radiations collected by the mirror fall on the element, with a resulting change in the latter's resistance. This resistance change is converted to a voltage change which is amplified and read on a milliammeter. From the reading it is possible to calculate, to within 5 degrees Centigrade, the degree of overheating at the joint.

Further delvings into the intricacies of the machine, however, belie its first-glance simplicity. In front of the heat-sensitive element or resister, is a rotating semi-circular disc, made of some substance such as glass or copper, which prevents the infra-red rays from reaching the element during half its rotation. This "chopping" effect simplifies the problem of amplifying the very small voltages generated in the resister.

In calculating the temperature of a joint, consideration must be given to several factors besides the reading on the milliammeter. Wind, for example, cools off the joint to such an extent that the bolometer cannot be used when the wind is stronger than three miles per hour. Heat from the sun and radiation from the sky are among other factors the operators of the machine must contend with, so that it becomes a very complicated business indeed.

Developed over a year ago, the bolometer has already proved itself extremely valuable in maintaining efficient line service. Improvements are still being made on the machine, which Mr. Leslie hopes will eventually become a routine maintenance tool.

● EDITOR'S NOTE: Edith Kent, *Hydro News* staff writer, has been exploring Hydro's "Lab" in search of the research which is vitally associated with the Commission's day-to-day operations and service to the people of Ontario. This is the second in a special series of articles on the laboratory.

Lighter Lines

Judge: Why did you strike this dentist?

Accused: He got on my nerves.

* * *

A visiting pastor was enjoying a round of golf with his host when a great calamity befell him. Taking a mighty swing, he missed the ball completely.

"Oh, Boulder!" he exclaimed.

His mystified companion asked for an explanation.

"I meant the biggest dam on earth," came the reply.

* * *

Recruit: What's on the menu tonight?

Cook: Oh, we have hundred of things to eat tonight.

Recruit: What are they?

Cook: Beans.

* * *

The bachelor was paying a visit to the house of a friend, a married man, and found himself pretty bored by all the talk about the son and heir.

"Just fancy," said the adoring mother, "he's only 17 months old and he's been walking for nearly nine months!"

"Really?" said the visitor wearily. "Don't you think it's about time he sat down?"

* * *

"Is George a confirmed bachelor?"

"He is now. He sent his picture to the Lonely Hearts Club and they sent it back with a note saying 'We're not that lonely'."

* * *

"George, you may bring me two fried eggs, some boiled ham, a pot of coffee and some toast," said the man to the waiter on the dining car.

"Yassa."

The other man said "Bring me the same, but eliminate the eggs."

In a moment, George came back.

"S'cuse me boss, but jes' what did you all say 'bout dem aigs?"

"I said you could eliminate them."

"Yassa." And he hurried away to the kitchen.

In another moment he came back once more, leaned confidentially and penitently over the table and said: "We had a bad accident just 'fore we leave de depot dis mawnin', boss, and de 'liminator done busted off right at de handle. Will you take 'em fried same as dis hyar gen-man?"

* * *

Hoping to inspire his workers with promptness and efficiency, the businessman hung a number of signs reading "Do it now!" around his factory and office.

Asked some weeks later how the reaction was, he shook his head sadly.

"I don't even want to talk about it," he said. "The head bookkeeper eloped with the best secretary I ever had; three typists asked for a raise; the factory hands decided to go on strike, and the office boy joined the navy."

* * *

The customer pointed to the Chinese characters on his laundry ticket and asked the Chinaman "Is that my name?"

"No name! Descliption," the Chinaman answered. "Means li'l ole man, closs-eyed, no teet."

* * *

"So your husband's in the army now, Mrs. Worrit?"

"Yes they've made him a gunner an' that's what he's been ever since I married him."

"A gunner?"

"Yes, always 'gunner' do this, and 'gunner' do that, but he never did do anything worth while!"

* * *

A man and his wife, hiking in the woods, suddenly realized they had lost their way.

"I wish Emily Post were here with us," said the husband, "I think we took the wrong fork."



"When he points, he really points!"

Monthly Load Summary

FEBRUARY, 1950

PRIMARY power demands for February (actual load plus cuts) as reported by The Hydro-Electric Power Commission of Ontario, continue to reflect the more favourable conditions noted in the January summary. On the Southern Ontario System, the maximum 20-minute peak demand for February was 1,956,155 kilowatts compared with 1,842,422 kilowatts for February, 1949. This was an increase of 6.2 percent. In the Thunder Bay System the demand this February was 165,378 kilowatts compared with 131,149 kilowatts in February, 1949. The increase of rather more than 26 percent is in large part due to a demand of approximately 21,600 kilowatts from the Kaministiquia Power Company's customers who were taken over by the Commission in April of last year. Excluding this new demand, the figures for February, 1950, were, therefore, approximately 143,800 kilowatts, an increase of 9.6 percent over the corresponding month of last year. Primary demands in the Northern Ontario Properties mounted last month to 221,539 kilowatts, an increase of 10.5 percent over the 200,562 kilowatt demand in February, 1949.

Total generated and purchased power in the Southern Ontario System for February showed an increase of 7 percent over the corresponding month of 1950. The figures for February of this year were 1,861,625 kilowatts compared with 1,739,592 kilowatts for February, 1949. On the Thunder Bay System 171,078 kilowatts were generated in February, 1950, compared with 142,249 kilowatts produced in February, 1949. Excluding the power generated at the Kaministiquia Company's station, the total for February, 1950, was 149,378 kilowatts—an increase of 5 percent. The figures for Northern Ontario Properties were 225,119 kilowatts generated and purchased in February, 1950 as against 205,077 kilowatts in February, 1949. This was an increase of 9.8 percent.

The detailed tabulation follows:

	Maximum 20-Minute Peak Kw		
	February 1950	February 1949	Percent Increase
PRIMARY DEMANDS (Actual Loads plus Cuts)			
Southern Ontario System	1,956,155	1,842,422	+ 6.2
Thunder Bay System	165,378	131,149	+26.1
Northern Ont. Properties	221,539	200,562	+10.5
TOTAL GENERATED AND PURCHASED			
Southern Ontario System	1,861,625	1,739,592	+ 7.0
Thunder Bay System	171,078	142,249	+20.3
Northern Ont. Properties	225,119	205,077	+ 9.8

WILL TEST COLOUR TELEVISION

Washington has been selected as one of four cities where intensive field tests of competing colour television systems will be conducted in private homes, the Federal Communications Commission announced recently.

ALASKA POTENTIAL POWER SOURCE

Potential hydro-electric generating capacity available for development in Alaska amounts to some eight million kilowatts, states a report issued by the Federal Power Commission.

"This power," continues the report, "could be developed to meet urgent present requirements and provide a way for a further utilization of the rich natural resources the territory possesses, according to a Bureau of Reclamation survey."

MUNICIPAL LOADS FEBRUARY, 1950

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION

(25-Cycle)

	Peak in K.W.	Domestic Consumers
Acton	1,925	686
Agincourt	507	200
Ailsa Craig	159	167
Alvinston	144	233
Amherstburg	1,526	857
Ancaster Tw.	577	376
Arkona	111	132
Aurora	1,639	899
Aylmer	1,626	861
Ayr	288	248
Baden	675	172
Beachville	774	188
Beamsville	682	480
Belle River	298	398
Blenheim	723	648
Blyth	257	185
Bolton	263	220
Bothwell	193	209
Brampton	3,870	1,902
Brantford	23,648	9,280
Brantford Twp.	3,074	2,314
Bridgeport	300	227
Brigden	134	137
Brussels	295	275
Burford	340	265
Burgessville	90	63
Burlington	2,294	1,464
Burlington Beach	586	774
Caledonia	464	483
Campbellville	66	64
Cayuga	221	214
Chatham	9,490	5,193
Chippawa	441	434
Clifford	152	145
Clinton	1,029	698
Comber	152	153
Cottam	128	155
Courtright	80	122
Dashwood	154	118
Delaware	135	82
Delhi	929	730
Dorchester	157	162
Drayton	168	181
Dresden	546	560
Drumbo	133	110
Dublin	68	71
Dundas	3,061	1,599
Dunnville	1,678	1,178
Dutton	248	247
East York Twp.	15,896	13,969
Elmira	1,638	650
Elora	578	390
Embro	181	147
Erieau	200	247
Erie Beach	18	98
Essex	720	645
Etobicoke	18,082	9,540
Exeter	1,101	709
Fergus	1,736	830
Fonthill	387	346
Forest	617	568
Forest Hill	8,494	4,163
Galt	12,315	4,936
Georgetown	2,360	1,085
Glencoe	245	265
Goderich	1,968	1,531
Granton	66	90
Grimsby	1,004	741
Guelph	13,390	6,413
Hagersville	789	463
Hamilton	154,801	46,717
Harriston	557	403
Harrow	720	407
Hensall	273	227
Hespeler	3,440	936
Highgate	90	114
Humberstone	709	869
Ingersoll	3,594	1,974
Jarvis	199	173
Kingsville	859	720
Kitchener	31,777	10,006
Lambeth	259	174
LaSalle	464	374
Leamington	2,402	1,991
Listowel	1,642	955
London	40,212	22,656
London Twp.	792	614
Long Branch	2,594	1,986
Lucan	308	237
Lynden	128	114
Markham	459	393
Merlin	121	147
Merritton	9,934	1,108
Milton	1,697	651
Milverton	487	295
Mimico	3,524	2,607
Mitchell	1,004	585
Moorefield	81	72
Mount Brydges	98	192
Newbury	60	90
New Hamburg	751	432
Newmarket	2,307	1,295
New Toronto	10,641	2,246
Niagara Falls	11,275	5,471
Niagara-on-the Lake	870	725
North York Twp.	24,005	11,960
Norwich	522	427
Oil Springs	170	124
Otterville	160	179
Palmerston	605	457
Paris	2,271	1,301
Parkhill	360	375
Petrolia	896	867
Plattsville	229	129
Point Edward	2,036	417
Port Colborne	2,106	1,789
Port Credit	1,495	753
Port Dalhousie	895	779
Port Dover	604	897
Port Rowan	164	226
Port Stanley	894	898
Preston	4,729	1,870
Princeton	122	103
Queenston	141	89
Richmond Hill	838	527
Ridgetown	619	675
Riverside	1,805	1,941
Rockwood	177	192
Rodney	193	296
St. Catharines	26,435	9,801
St. Clair Beach	111	132
St. George	216	186
St. Jacobs	334	153
St. Marys	1,898	1,188
St. Thomas	8,719	5,019
Sarnia	11,628	5,963
Scarborough Twp.	12,367	8,554
Seaforth	1,064	574
Simcoe	2,798	1,879
Smithville	456	200
Springfield	97	128
Stamford Twp.	4,468	3,233
Stoney Creek	611	400
Stouffville	557	478
Stratford	7,510	4,885
Strathroy	1,720	1,041
Streetsville	728	247
Sutton	330	620
Swansea	3,201	2,224
Tavistock	690	325
Tecumseh	601	848
Thamesford	285	167
Thamesville	303	284
Thedford	179	192
Thorndale	139	89
Thorold	3,254	1,413
Tilbury	1,110	690
Tillsonburg	2,167	1,438
Toronto	353,197	156,481
Toronto Twp.	7,075	4,331
Wallaceburg	6,039	1,850
Wardsville	109	84
Waterdown	439	317
Waterford	488	472
Waterloo	6,734	2,644
Watford	505	333

MUNICIPAL LOADS FEBRUARY, 1950

	Peak in K.W.	Domestic Consumers
Welland	10,279	3,463
Wellesley	165	154
West Lorne	561	275
Weston	5,310	1,940
Wheatley	363	273
Windsor	53,283	27,995
Woodbridge	1,214	349
Woodstock	8,811	3,847
Wyoming	134	192
York Typ.	27,448	24,626
Zurich	173	187
(66⅔-Cycle)		
Bronte	238	400
Oakville	2,922	1,406
Trafalgar Twp.	1,113	753
GEORGIAN BAY DIVISION (60-Cycle)		
Alliston	644	502
Arthur	275	303
Bala	124	443
Barrie	5,210	2,897
Beaverton	322	375
Beeton	117	165
Bradford	484	350
Brechin	45	70
Cannington	236	288
Chatsworth	139	126
Chesley	750	492
Coldwater	133	170
Collingwood	2,802	1,928
Cookstown	104	139
Creemore	171	204
Dundalk	218	236
Durham	434	526
Elmvale	231	218
Elmwood	126	94
Flesherton	110	144
Grand Valley	214	209
Gravenhurst	1,356	885
Hanover	2,019	973
Holstein	33	69
Huntsville	1,568	798
Kincardine	1,020	842
Kirkfield	33	41
Lucknow	380	360
Markdale	246	242
Meaford	1,010	851
Midland	3,912	1,926
Mildmay	191	220
Mount Forest	734	545
Neustadt	81	143
Orangeville	1,050	838
Owen Sound	7,273	4,374
Paisley	211	238
Parry Sound	466	1,330
Penetanguishene	956	952
Port Carling	137	278
Port Elgin	531	617
Port McNicoll	128	265
Port Perry	381	452
Priceville	19	50
Ripley	124	144
Rosseau	30	79
Shelburne	403	356
Southampton	559	673
Stayner	340	342
Sunderland	174	174
Tara	153	178
Teeswater	222	247
Thornbury	149	297
Thornton	47	72
Tottenham	102	177
Uxbridge	462	512
Victoria Harbour	104	318
Walkerton	1,308	850
Waubaushene	143	274
Wiarton	554	518
Windermere	36	79
Wingham	1,093	661
Woodville	70	130
EASTERN ONTARIO DIVISION (60-Cycle)		
Alexandria	446	526
Almonte	584	710
Apple Hill	45	74
Arnprior	1,647	1,036
Athens	136	219
Bath	61	90
Belleville	8,869	4,546
Bloomfield	164	197
Bobcaygeon	100	435
Bowmanville	3,275	1,314
Braeside	146	101
Brighton	660	533
Brockville	7,459	3,469
Cardinal	368	419
Carleton Place	1,994	1,209
Chesterville	513	307
Cobden	204	208
Cobourg	2,370	1,617
Colborne	350	302
Deseronto	3,214	441
Finch	140	133
Frankford	211	262
Hastings	176	301
Havelock	255	329
Iroquois	349	339
Kemptville	522	440
Kingston	19,069	9,223
Lakefield	600	447
Lanark	131	218
Lancaster	68	132
Lindsay	3 895	2,527
Madoc	426	349
Marmora	182	287
Martintown	57	72
Maxville	166	200
Millbrook	168	220
Morrisburg	491	497
Napanee	1,647	1,026
Newcastle	349	256
Norwood	226	256
Omemee	168	204
Orona	142	207
Oshawa	21,945	7,650
Ottawa	44,087	16,849
Perth	1,939	1,282
Peterborough	20,035	8,744
Picton	1,791	1,268
Port Hope	3,597	1,733
Prescott	1,296	865
Renfrew	1,092	1,581
Richmond	112	119
Russell	99	128
Smiths Falls	3,631	2,318
Stirling	440	336
Trenton	5,663	2,328
Tweed	469	370
Warkworth	94	162
Wellington	273	379
Westport	164	173
Whitby	1,803	1,232
Williamsburg	101	96
Winchester	559	334
THUNDER BAY SYSTEM (60-Cycle)		
Terrace Bay	661	212
Fort William	25,465	8,715
Nipigon Twp.	539	343
Port Arthur	21,255	7,677
Red Rock	252	162
NORTHERN ONTARIO PROPERTIES		
Nipissing District (60-Cycle)		
North Bay	5,722	3,980
Patricia District (60-Cycle)		
Sioux Lookout	602	650
Sudbury District (60-Cycle)		
Capreol	548	482
Sudbury	11,011	9,347



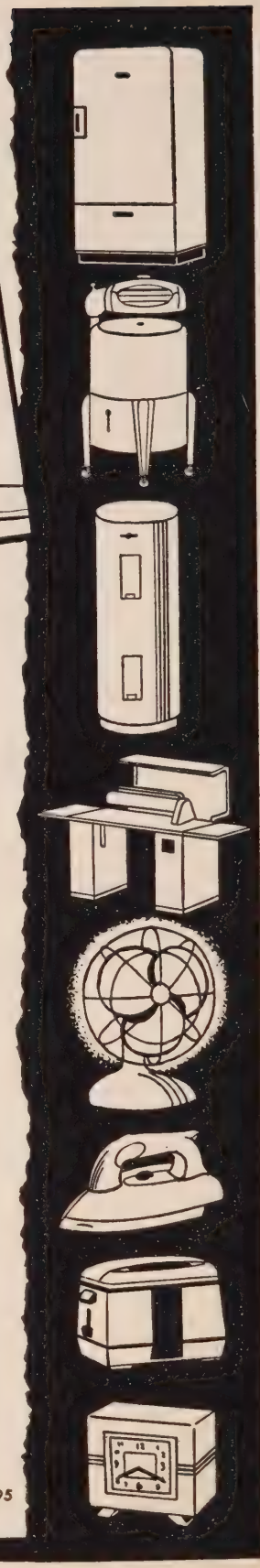
HYDRO News



DES JOACHIMS

VOL. 37 MAY-JUNE, 1950 NUMBERS 5 & 6





WIRE WISELY - LIVE WELL

Electricity, properly used, brings modern service and convenience to your fingertips. It adds to the ease and enjoyment of living, it places a host of "electrical servants" at your beck and call twenty-four hours of the day. But the extent to which you can use these electrical servants depends upon how wisely your home is wired.

Inadequate wiring is inefficient . . . even dangerous. *Adequate* wiring lets you operate your lighting and appliances at peak efficiency at all times. What is adequate wiring? Briefly, it means the correct size of three wire service to the house, the proper number of circuits and correct size of wire within the home, together with sufficient outlets in each room to take care of your electrical requirements both today and in the future.



THE FUSE

When too great a load is placed on a circuit, or when a "short" occurs, the fuse "burns out" and cuts off the power. This is your protection. BE SURE TO REPLACE A FUSE WITH THE CORRECT SIZE.

Thanks to "power at cost" you can economically use all these electrical servants in your home—*if* you have provided for them. Be sure, whether you plan to build or remodel, that adequate wiring has top priority on your check list of things you need. We will be glad to help you solve your wiring problems.

The Hydro-Electric Power Commission of Ontario

2295

HYDRO News

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER PHOTO

OFFICIAL opening of Hydro's senior postwar power project at Des Joachims on the Ottawa River during June this year will mark an important milestone in Hydro history. As each of the eight units at this development are placed in service progressively during the next few months, Des Joachims with a total capacity of 358,000 kilowatts (480,000 hp), will take its place as the second largest plant in the growing Hydro network.

This month's cover photograph by Hydro Staff Photographer J. B. Helling depicts this great power development as it looks from the air during the final phases of construction.

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May — June

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Section of the spillway at Hydro's Tur
development on the Mississagi ri
With a drop of approximately 215 f
the spillway conveys surplus water f
sluiceways, situated on the eastern
of the main dam, back into the ri
approximately 3,200 feet downstre

Photograph by E. A. Joh

NEW LANDMARK

HYDRO'S Queenston Generating Station in the Niagara area has long been recognized as a mecca for visitors not only from Canada and the United States but from all parts of the world. With the passing of time Niagara Falls and the Queenston plant have become "musts" on the itineraries of tourists and holidaymakers, while many groups and clubs have organized parties to take advantage of the conducted tours of the plant. The high educational value of these tours has been widely acclaimed by those who have visited the plant and many fine tributes have been paid to the work of Miss Rosanne Richardson and her efficient corps of guides.

It is of more than passing interest to note that 1,003 persons visited the Queenston plant on Saturday, May 20, a figure which is reported to be an all-time high for one day. And to date, something like 300,000 names have been written in the Visitors' Book.

While Queenston has long been the ruling Queen of all the Commission's developments and a world-famous symbol of Hydro in Ontario, this 500,000-horsepower plant is now being endowed with an added attraction in the form of a magnificent floral clock, which, "through time," is likely to become equally renowned in itself.

Attention is directed to this timepiece in a special article, "See It With Flowers," by Charles G. W. MacIntosh, in this issue of Hydro News.

Considerable research done by Mr. MacIntosh indicates that while flower clocks are to be found in cities in various parts of the world, the Hydro clock, when completed, as far as can be ascertained, will be the largest of them all. The minute hand alone will be 15 feet in length, 500 pounds in weight, and capable of supporting the weight of an average man while moving around the dial which will have a diameter of 38 feet. On the face of the clock, it is reported, will be 20,080 flowers and plants.

News of the construction of this clock, which will be located on the north side of the plant, will undoubtedly stir nostalgic memories in the minds of Scots who recall seeing the famous floral clock in the Princes Street Garden in Edinburgh. The "granddaddy" of them all, the Edinburgh clock was built about 1903.

When construction of the Hydro clock has been completed—this summer—it will take its place as a worthy addition to the many beautiful and historic landmarks in the Niagara area, and future visitors will be assured of a "ringing" welcome as the pleasing Westminster Chimes re-echo through the inviting grounds of the Queenston plant.

CARRYING ON

THIS year, as in the years that have passed, a number of employees who have given long and faithful service are retiring from Ontario Hydro and the Municipal Commissions. It is hard for the rest of us to see them go. And it will be hard for them to relinquish to others what time and custom have led them to consider as the *major opus* of their lives.

Yes. It will be something of a wrench. There is a "family" spirit in Hydro akin to the old Army *cameraderie.* If retiring meant severing all contacts with those with whom we have worked side by side, it would undoubtedly be a sorrowful and perhaps painful leave-taking. But, of course, it does not mean that at all. Old friendships will be retained and greater opportunity, in many cases, will be afforded for extending the spirit of good will and co-operation that has been engendered and nourished in every Hydro vocation and in every Hydro activity.

Work with Hydro, we are prone to think, will have patterned a character which will make its impact felt on our community life. Service to this beloved province of ours, in most instances, we believe, will merely assume another form —less laborious, it is true, but no less abundantly fruitful. Those who are retiring have still a place to take in the life, in the progress and in the continuing prosperity of their community.

POWER AHEAD OF SCHEDULE



Open Tunnel and Pine Portage and Receive Initial Delivery of Power from Des Joachims Next Month

by
Harry M. Blake
Hydro News

IN common with many June brides-to-be, Hydro is making breath-taking preparations for happy events which, while not of a strictly marital character, will bring the people of Ontario a handsome dowry of over 200,000 horsepower next month.

Back of these events is a story of tremendous Hydro achievement in that the program of new construction has been accelerated to the point where power from three sources is becoming available ahead of schedule.

In this connection, Hydro Chairman Robert H. Saunders has announced that on June 14, the Tunnel development on the Mississagi River will be placed in service, followed by Pine Portage on the Nipigon River on June 21, while on June 28 initial delivery of power will be received from the Des Joachims plant on the Ottawa River. A tentative date in December has also been set for an initial service of 40,000 horsepower from Chenaux, located below Des Joachims on the Ottawa River.

By the end of 1950, including already completed developments, approximately 874,000 horsepower will be available from eight out of eleven Hydro postwar projects. By the time Hydro's present expansion program is completed in 1952, a total of approximately 1,600,000 horse-



power will have been added to the Commission's power resources.

Biggest Co-Operative Effort

The speeding-up of Hydro's construction program, the Hydro Chairman stated, represented one of the greatest peacetime, co-operative efforts in the history of this province. There had been unparalleled teamplay on the part of all the Commission's employees and suppliers of material and equipment. At the same time, he said, consumers of electricity in every category had co-operated by their conservation of power, and had, thus, helped hasten the day when critical power shortages would be a matter of the past.

Tunnel Development

Situated on the Mississagi River 20 miles north of Thessalon, the Tunnel development will feed 60-cycle power into the Sudbury, Nipissing, Temiskaming and Abitibi districts of the Northern Ontario Properties. Erected at an estimated cost of $17,500,000 including generator and step-up transformation, the project was built by Rayner Construction Company Limited, according to the plans and under the supervision of the Commission.

Construction at this site began in the fall of 1947, and during the intervening period approximately eight hundred men have been busily engaged on the project, which has involved the construction of a power dam — the highest the Hydro has ever built — rising 235 feet above the solid rock of the river bed and extending 1,000 feet across the top. On the eastern side of the dam, nine sluiceways of reinforced concrete will discharge surplus

McCONNELL LAKE control dam at Hydro's 480,000 horsepower Des Joachims development, shown as it nears completion, will function to discharge the spring freshets and flood waters of the Ottawa River. It is equipped with six 40-ft. sluiceways and forty 16-ft. stop-log sluices.

★ ★ ★

TWENTY-EIGHT THOUSAND cu. yds. of rock at one blast — as the final big shot is fired for the clearing of the tail-race at Des Joachims. About 1,4000,000 cu. yds. of rock were excavated for the 7,000-ft. channel. The job was carried out jointly by Hydro and the Harco Const. Co.





REGARDED AS one of the more difficult operations entailed in bringing "Tunnel" into service, excavation of the tailrace channel below the powerhouse for a distance of approximately 1,800 ft. downstream, has involved the removal of 120,000 tons of rock from the river bed.

water through an excavated channel into the creek draw, which will convey it to the river 3,200 feet downstream from the powerhouse. The headwaters of the dam extend upstream about twelve miles, covering an area of approximately 5,000 acres. Most of the timber in the flooded area was turned into finished lumber for use on the project. A side dam, 1,080 feet long and 45 feet high, is located 100 feet upstream west from the main structure. This dam and another one roughly 2½ miles upstream close low sections of the forebay. Two steel penstocks, to be encased in concrete, join the headworks' control structure with the turbines in the powerhouse at the foot of the dam. The water, after passing through the turbines, is discharged into the tailrace channel, which has been excavated to an approximate depth of 40 feet, extending 1,800 feet dowstream.

The Mississagi River, through the years, has conveyed thousands of logs on the first stage of a long journey into Canadian lumber markets. Hydro has constructed a log chute, 890 feet long and 6 feet deep, which will facilitate passage.

For the dam, penstocks and power house at Tunnel, 220,000 cubic yards of concrete were required. Building materials, which had to be transported to the site, totalled 70,000 tons. The erection of the structures and sluiceways on the site called for the removal of 165,000 cubic yards of rock, while 60,000 cubic yards of rock were excavated for the tailrace.

With Tunnel's two generating units operating under a gross head of 215 feet, power from the project will be generated at 60 cycles and carried over a 132-mile, 115,000-volt line which will feed the 60-cycle power into the 25- and 60-cycle systems of the Northeastern Region. This power will be distributed through the facilities of the Sudbury Frequency Changer and Transformer Station to the Sudbury, Nipissing, Timiskaming and Abitibi districts, where postwar expansion has created a record demand for power.

Pine Portage

Pine Portage on the Nipigon River will provide 60,000 kilowatts (80,000 hp.) this year for the Commission's Thunder Bay System. Its output will augment the power supply from Hydro's Cameron Falls and Alexander stations, which, for many years have served the lakehead cities of Port Arthur and Fort William and important pulp and paper mills in the Thunder Bay district. Power has also been supplied to the mining areas and communities in the Long Lac area, and the bringing into service of Pine Portage should spark further development and expansion in this section of the Northland.

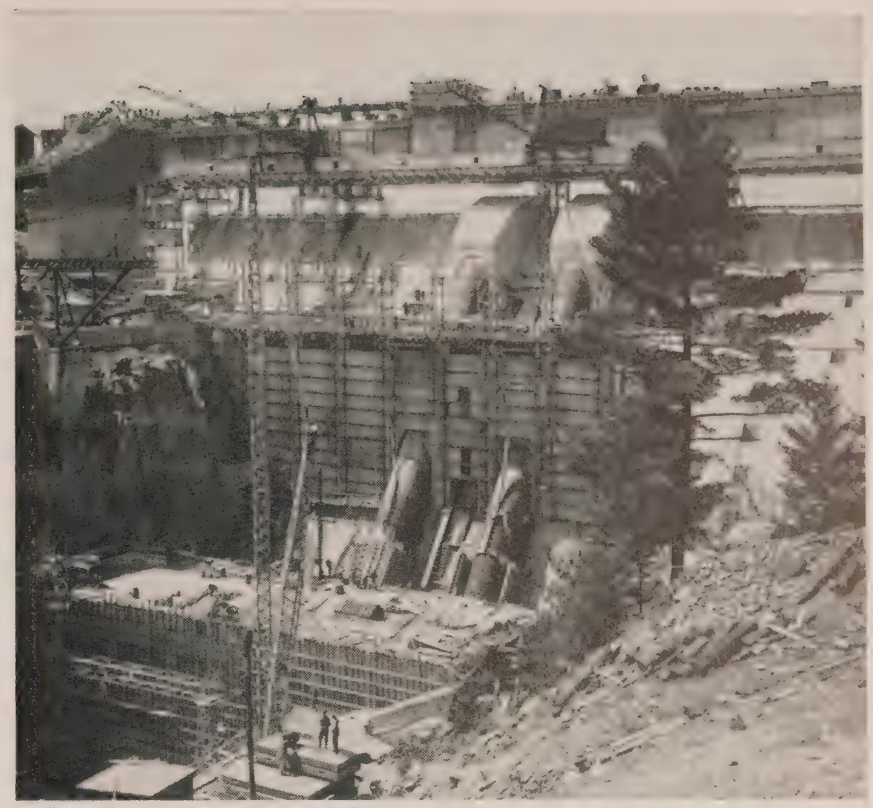
Construction of the development with two generating units, and step-up transformation facilities involves an estimated cost of $26,300,000 and dominated by the huge main dam, 3,000 ft. long and 140 ft. high above sound rock, construction on Pine Portage began in late 1947, and at

construction peak approximately 1,500 men were employed. The building of this plant presented Hydro with certain special engineering problems. Lack of a railway line into the site made it necessary to send enormous quantities of materials by truck, tractor, scow and sleigh. Cameron Falls was used as a main clearing point and materials arriving by rail were transhipped by road to the site. This entailed cutting a heavy-duty road through thirteen miles of thick bush to reach the new development.

Erection of the main dam at Pine Portage required the placing of 335,000 cubic yards of concrete. The powerhouse, 280 feet long, located on the west bank of the river at the base of the dam, together with the headworks at the top of the dam, required 46,000 cubic yards of concrete. Five thousand five hundred tons of steel and 9,800,000 board feet of lumber were used on the entire project. Total excavation of earth and for structures and channels at the development amounted to 760,000 cubic yards.

To obtain the required headpond for the development the river's level above the dam was raised approximately 100 feet to the level of Lake Nipigon, increasing the lake's area by fourteen square miles. This flooding necessitated the clearing of approximately 5,500 acres of land between the new dam and the lake. As has been the case elsewhere, a considerable amount of the timber cleared in this area was used for construction of the development.

Water from the headpond will be conveyed to the powerhouse turbines through concrete-encased steel penstocks 20 feet in diameter, and will be discharged



HIGHEST POWER dam ever built by Hydro, the massive concrete structure at Tunnel rises 235 feet above solid rock and extends 1,000 feet across the top. Two steel penstocks to be encased in concrete will convey water from the headworks to the powerhouse turbines.

★ ★ ★

VIEW OF main dam at Tunnel Development in foreground showing work in progress on headworks housing. Nine sluiceways of reinforced concrete, shown in the centre background, have been completed and will discharge surplus water back into the river below the powerhouse.





WITH THE completion of the first stage of closure operations at Pine Portage, water in forebay has risen 50 feet. Another 50 feet and it will be at operating level. This total rise of 100 feet will bring the section of the river upstream from the dam to the level of Lake Nipigon.

into the river below the Pine Rapids by means of a 600-foot tailrace channel cut through solid rock.

With logging commencing in May and continuing through to October, a steel log slide has been constructed on the east side of the river to accommodate the anticipated half million cords of logs which will pass through this area each season.

In addition to supplying local needs in the Thunder Bay district, Pine Portage will feed power via Port Arthur to Moose Lake to serve the Steep Rock Iron mines. This power will be fed over an existing 115,000-volt line which will be extended to Dryden, connecting with the circuits from Hydro's Ear Falls station on the English River, in the Patricia district, where there are 13 producing gold mines.

Des Joachims Station

Des Joachims, the largest of Hydro's current projects, will ultimately deliver 358,000 kilowatts (480,000 hp.) at 60 cycles to the Commission's Southern Ontario System. Employing at peak period some 2,500 men, this huge development ranking second only in magnitude to Hydro's Queenston development, was started in the fall of 1946. Estimated cost, including the plant itself and step-up transformation facilities is $75,775,000. The surrounding area has been considerably changed since that time for construction at this site necessitated clearing of 11,000 acres of land between Des Joachims and Mattawa (57 miles away), and the diversion and rebuilding of 23 miles of the main transcontinental line of the Canadian Pacific Railway and 12 miles of Provincial Highway.

The harnessing of the Ottawa River at Des Joachims, required the erection of a main dam, 2,400 feet long and 180 feet above sound rock; an auxiliary dam, 1,300 feet long and 50 feet above sound rock, and a control dam 1,600 feet long and 130 feet high. The control dam located at the head of McConnell Lake, acts as a "safety-valve" for the development, to discharge the flow not required by the powerhouse.

Conveyed from the headworks at the top of the main dam by eight 22-foot diameter steel penstocks, water will flow through the turbines in the powerhouse at the base of the main dam and will be discharged into the tailrace channel. This channel, some 7,000 feet long and 175 feet wide, passes through Des Joachims rapids section of the river.

Huge amounts of materials were required for construction at Des Joachims. For the main dam and headworks alone 435,000 cubic yards of concrete were placed. The overall amount of concrete for all structures at the development was 880,000 cubic yards, (sufficient to build a standard sidewalk 4 feet wide by 4 inches thick, 3,400 miles in length). Reinforcing steel for concrete at the site totalled 5,600 tons (140 train carloads). Lumber required for camps, forms and construction timber amounted to 18,000,000 f.b.m. (720 carloads — equivalent to a train six miles long).

Excavation of mammoth proportions was carried out at Des Joachims.

For structures, channels and roads of access it was necessary to remove 857,000 cubic yards of earth and 2,690,000 cubic yards of rock. This rock excavation for the project properly speaking is equivalent to the excavation that would be required for a standard one-track railway tunnel about 50 miles long, or extending for more than the distance from Toronto to Hamilton.

Diversions of sections of the Canadian Pacific Railway and No. 17 Highway necessitated the removal of an additional 1,487,000 cubic yards of earth and 906,000 cubic yards of rock. Total excavation for the Des Joachims project and associated reconstruction of railway and roadway was, therefore, 5,940,000 cubic yards of material. The excavation for the Toronto Transportation Commission's subway from Toronto Union Station to Eglinton Avenue, a distance of about 3½ miles, is estimated at 1,390,000 cubic yards. The work carried out at Des Joachims consequently represents more excavation than would be required for the building of four such subways.

Power from Des Joachims will be transmitted for a distance of some 200 miles over 230,000-volt steel tower transmission

(Continued on page 19)



GENERAL VIEW of Hydro's Pine Portage development on the Nipigon River as it nears completion. The main dam is 3,000 feet long, with a maximum height of 140 feet above sound rock. Centre right, the powerhouse structures are rising. In the background is the construction camp.

DOWNSTREAM FACE of the dam at Pine Portage, at the end of the first stage of closure operations. The flow through the two closure ports is being passed on to the Cameron Falls and Alexander stations further downstream. When construction is completed, the riverflow will be restored.



Merritton



New Hydro Building Officially Opened— "Typifies Progress" Of Busy Municipality

by
Grace J. Carter
News Editor

"IT'S a great pleasure to see Hydro forging ahead in Merritton and you should be very proud of your new building which so aptly typifies this progress."

In these words, Hydro Chairman Robert H. Saunders officially opened the attractive, modern office building of the Merritton Hydro-Electric Commission on April 26. As part of the opening ceremony Mr. Saunders unveiled a metal plaque in memory of James Rennie, former Hydro Superintendent, who died a few months ago. Mr. Rennie, he said, would long be remembered for his untiring efforts while in the service of the local Commission, which extended over a 25-year period. On hand and taking a well-earned bow for their part in seeing the new building completed were the members of the present commission, comprising F. R. Kaupp, Chairman; Mayor L. H. Skipper, W. F. Davidson, Howard Lachanse, W. Partington, Commissioners; L. E. Richardson, Superintendent; and H. L. Savigny, Secretary.

During the day, "open house" enabled many of Merritton's citizens to look through the new building with its modern fluorescent lighting, pale green walls and steel furniture. Constructed at a cost of approximately $43,000, the spacious new building houses a board room, superintendent's office, general office, meter room, garage at the back and stock room in the basement.

During the afternoon, Hydro films were shown to students of both High and Public schools by A. C. Hardy of the H.E.P.C.

Following the evening banquet in the Legion Hall, the entire group moved en masse to the Town Hall for the remainder of the program, where guest speaker, Robert H. Saunders, told his audience that, "We should be extremely proud of those who started Hydro and gave us that which, over the years, has been the greatest single factor in the economic development of this province—low-cost electric power in abundance." And it was the intention of Hydro, he said, to safeguard the future by continuing to supply low-cost electric power in abundance.

The Chairman went on to say this would be a big year in Hydro with three developments scheduled to deliver power in June. The first of these will be Tunnel on the Mississagi River, northeast of Sault Ste. Marie, bringing in some 42,000 kilowatts (56,500 hp) of electric energy; and Pine Portage on the Nipigon River which will, on completion of two units this year, supply 60,000 kilowatts (80,000 hp) with an ultimate capacity of twice that figure when required. From the Des Joachims Development on the Ottawa River, he said, there would be an initial delivery of 89,520 kilowatts (120,000 hp) from the first two units. The remaining six units at Des Joachims, he said, would come into operation progressively and by the end of the year it was expected that the entire output of the plant would be available—358,000 kilowatts (480,000 hp).

Hydro, Mr. Saunders said, was also proceeding with the LaCave Development further north on the Ottawa River. This plant was scheduled to be in service by 1952, its total capacity to be some 144,000 kilowatts (192,000 hp). Chenaux, also on the Ottawa River, with a capacity of 120,000 kilowatts (160,000 hp) would probably be in initial service in December this year. The steam plants at Toronto and Windsor were scheduled to come in during 1951.

In conclusion Mr. Saunders stated that Canada was credited with having the highest standard of living in the world. In Canada, he announced, the per capita use of electricity amounted to some 3,300 kilowatthours a year; in Ontario it was over 3,600, and in the United States, 1,600.

Under the chairmanship of F. R. Kaupp, other speakers included Hon. Charles Daley, Ontario Minister of Labor; Mayor L. H. Skipper; Howard Lachanse, Commissioner; M. J. McHenry, the Commission's Director of the Consumer Service Division; and D. T. Flannery, Con-

(Continued on page 15)



DRIVEN BY a 22 horsepower motor this streamlined unit is used for machining steering knuckles. Other car parts are made in this factory, including the clutch, front axle and propeller shaft.

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ILLUSTRATION BELOW shows a section of the well-equipped meter room which is part of the new Hydro Building. On the left is Superintendent L. E. Richardson testing a meter, while Ron Gill sets 'em up. About 200 meters a year are repaired.



THIS PHOTOGRAPH shows a corner of the spacious general office where L. E. Savigny, Secretary; and Nora Ralston perform their daily tasks. Notice the modern steel furniture.



TAKEN IN the compressor room where there are six—600 horsepower and two—300 horsepower motors which drive the compressors that supply compressed air for the hammers and various machines in the Hayes Steel Co



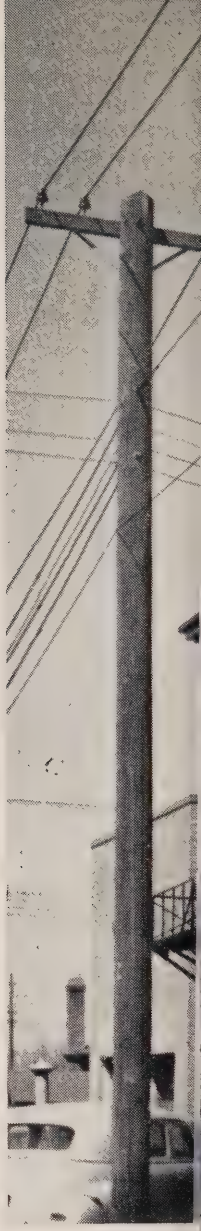
AT THE back of the new office is a modern garage. Standing beside the truck from left to right we have Ron Gill, Line Foreman; Ted Collins, Lineman; L. E. Richardson, Superintendent; and Alf. Hammond, Lineman

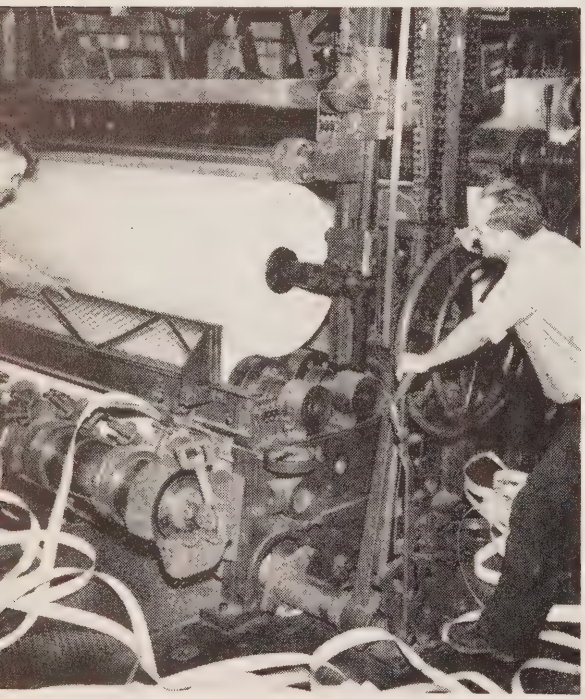


Merritton



THIS HUGE pile of logs belonging to one of the paper mills is symbolic of Merritton's industry. This town claims the greatest per capita consumption of power in Ontario.





PRODUCING SULPHITE pulp, specialty papers, flour and cereal bags at the Alliance Paper Mills, this picture shows a roll winder trimming coated box board down to the right size. This unit is driven by a 20 HP. motor.

★

RAILWAY STATIONS are always interesting places and whether the journey be short or long, the traveller is always glad to reach his destination. Merritton's station is on a direct line from Toronto to Suspension Bridge.



BUILT IN 1879, this fine stone mason building is Merritton's Town Hall. Many interesting records are kept here in the vaults.



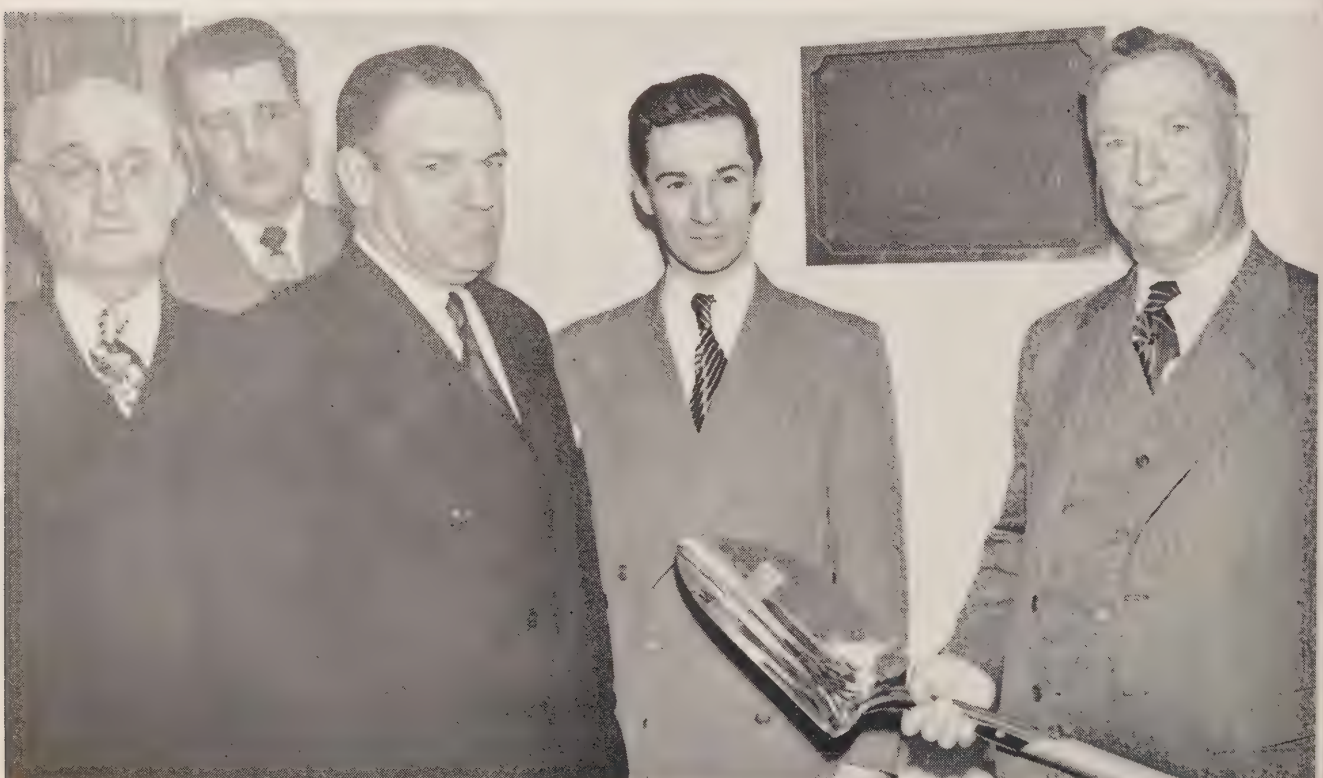
THE TOWNSPEOPLE are particularly proud of their war memorial and claim it to be one of the finest in Canada. Standing beside the Town Hall the monument pays tribute to the men in both World Wars who lost their lives.

THERE ARE many fine homes in Merritton and this is an outstanding example. Situated on the top of a hill, the residents can see as far as Toronto.





DURING THE afternoon Hydro films were shown in the Town Hall to a capacity audience of public and high school students, after which they were conducted through the new public utility building. This is a group of the younger ones who look as though they are enjoying it.



JUST AFTER the opening ceremony, Hon. Charles Daley, Ontario Minister of Labor, picked up the shovel that had been used by the late James Rennie in June, 1949, to turn the first sod for the new utility building. Others in the group are: left to right, Wright Partington, H. F. LaChanse, Commissioners; Hydro Chairman Robert H. Saunders and F. R. Kaupp, Chairman of the Merritton Hydro Commission.

MERRITTON

(Continued from page 10)

sumer Service Engineer, Niagara Region.

According to the historical records, Merritton, a town in Lincoln County, about two miles southeast of St. Catharines was named after its founder, Thomas Rodman Merritt (1824-1906). The Merritt family, it seems, were United Empire Loyalists and were among the first settlers of Lincoln County. In 1874, Merritton was incorporated as a village with W. W. Waite as the first Reeve, and in 1918 the village became a town.

Boasting a greater per capita consumption of power than any other municipality in Ontario, Merritton has come a long way since 1890 when the first contract for electricity was signed between the Merritton Council and H. P. Sims. Power was generated originally by a 30-horsepower water wheel. Administration was under the direction of a commission comprising Reeve Phelps, Dr. Vanderburgh and J. Hara. At that time, the street lighting consisted of nine arc lights with electric lights in the town hall, churches and several of the homes. The rate charged was 5 cents a week for 16 candlepower lamp and 10 cents for 32 candlepower. Electric irons were 25 cents a week with the stipulation that they must not be used after dark.

Since the water wheel had a speed governor, breakdowns were frequent, and permission was eventually granted to take power from the Cataract Power Company. This supply, however, was not much better and Mr. Sims sold the system to the village in 1908. The commission at that time abandoned the Cataract contract and subsequently made arrangements with the Ontario Power Company for a supply of 75 horsepower.

This contract proved more satisfactory and it was not until 1920 that Merritton joined the Hydro family when the utility was renamed the Hydro Commission of the Town of Merritton with J. H. G. Horey as Chairman; James Clark, Thomas Hastings, William Nesbitt and Charles Richardson as commissioners. At that time, the total load was 250 kilowatts as compared with the present load of 12,000 kilowatts. This load at present serves 1,214 domestic consumers, 83 commercial and 22 industrial users. Over the years the cost of service has steadily decreased. For instance, in 1921 with an average domestic monthly consumption of 24 kilowatthours, the average cost was 3.2 cents per kilowatthour and at the present time the average monthly consumption of domestic consumers is 184 kilowatthours with an average net cost per kilowatthour of 1.04 cents.

This enterprising town has several large industries including the Hayes Steel Products Limited; Alliance Paper Mills Limited; Interlake Tissue Mills Limited; and Garden City Paper Mills Limited.

When visiting this friendly municipality, which has a population of some 4,200, you will find many fine homes, up-to-date schools, a well-stocked public library, an imposing town hall, as well as facilities for all types of sports including an excellent outdoor swimming pool.

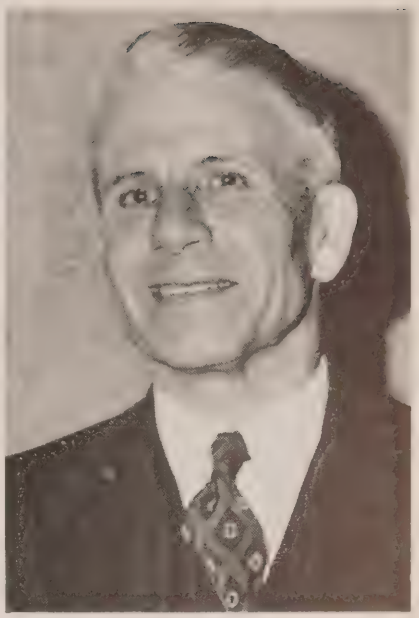
CHAIRMAN IN '48

WRIGHT PARTINGTON has served on the Merritton Hydro-Electric Commission continually since 1948, and in that year he was Chairman. He was born and educated in Merritton, and is a member of the Masons and Oddfellows.

Mr. Partington is married and has one daughter. He takes a keen interest in sports, with emphasis on baseball and hockey.



WRIGHT PARTINGTON



GEORGE F. HUTCHESON

APPOINTMENT of George F. Hutcheson as Acting Secretary of the Ontario Municipal Electric Association has recently been announced by D. P. Cliff, President of the Association. Mr. Hutcheson took over his duties on May 1, following the resignation of Mrs. Kathleen Kestell.

Mr. Hutcheson has been associated with the Huntsville Public Utilities Commission for over 25 years, holding the office of Chairman. His family were among the early residents of the town, where he attended primary and secondary schools. He is a graduate in Applied Science of the University of Toronto.

NEW SUPERINTENDENT AT MERRITTON

TO say that Lloyd Edward Richardson is a busy man is putting it mildly indeed. He is one of those people who is "on the go" every minute of the day and probably most of the evening. With a well-earned reputation of getting things done, "Rickie" as he is popularly known, was appointed Superintendent of the Merritton Hydro-Electric Commission in the early part of this year. He succeeded the late James Rennie who had served with the Merritton Commission for over 25 years.

Mr. Richardson has had considerable experience on the local Commission, having been a lineman for eight years and a line foreman for three years. Born and educated in Merritton, he knows practically everyone in town. In 1927 he served as Alderman. He is married and has one son who is a school teacher.

Keenly interested in sports, Mr. Richardson likes baseball, hockey, tennis and lawn bowling.



LLOYD E. RICHARDSON

See It With Flowers

Visitors To Hydro's Queenston Plant Will Tell Time By Large Floral Clock

by
C. G. W. MacIntosh
Hydro News

IT IS a pretty safe bet that the thousands of people who will visit Hydro's largest generating plant at Queenston this summer will be taking lots of time to look at the time.

In all probability they will smell the time before they actually see it for Hydro's new giant floral clock will have a face on which there will be 20,080 flowers and plants.

And that is not all. This timepiece, when completed, will likely be the largest of its kind in the world. The minute hand alone will be 15 feet in length and will weigh 500 pounds. It will be strong enough to support the weight of the average man while moving round the face of the dial. The hour hand will be 12 feet in length and also will weigh 500 pounds. The sweep second hand will be 15 feet long and will weigh 250 pounds. Like the hour and minute hands, it will be counterbalanced. (It will have a peripheral speed of 8 inches per second or one mile an hour. The hands will be fabricated from 3½ inch stainless steel tubing.)

These hands will be driven by a three-phase, two-horsepower, synchronous motor, and it is estimated that it will require 1⅓ horsepower to drive the hands. The clock will maintain correct time by the same principle that operates the familiar household electric clock. The generators in the numerous Commission's plants are operated at exactly constant speed, that is, 25 or 60 cycles as the case may be; the small synchronous motors in the household clock or the larger synchronous motor in the floral clock drive the hands at the required speed to maintain correct time.

The clock, whose dial will be 38 feet in diameter will be built on a one-to-three slope, so that it can be readily observed. It will be located on the north side of the Queenston plant where a new access road is now under construction.

Saw Edinburgh Clock

Hydro's decision to build a floral clock at Queenston is an interesting story. The idea literally was "planted" in the mind of R. L. Hearn, Hydro's General Manager and Chief Engineer, last year, by Hugh Duncan, maintenance electrician foreman at Queenston Generating Station.

It happened this way. Mr. Hearn mentioned to Mr. Duncan, a doughty Scot, that he was going on a business trip to Britain. "Be sure," said Mr. Duncan, "be sure to take time out to see the beautiful floral clock in Princes' Street Gardens, Edinburgh.

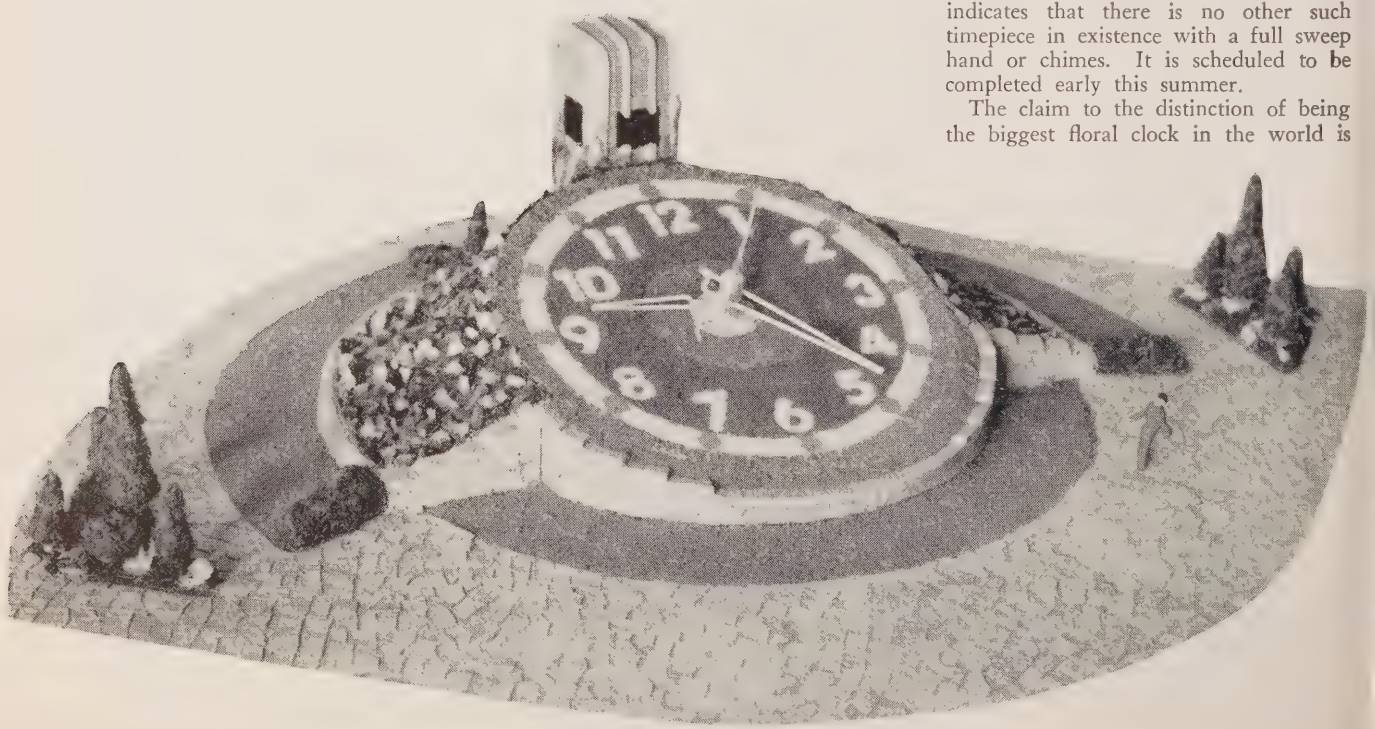
"Such a clock," he continued, "would be a good thing for Hydro to have here at Queenston. It could be electrically-operated, and would act as a beautiful and attractive drawing card to bring people to Queenston plant from all parts of Ontario and Canada, from the United States and other countries."

When in Scotland, Mr. Hearn did take time out from his business itinerary to visit the famous Princes' Street Gardens. There he inspected the original floral clock which has provided the basic idea for flower timepieces in other parts of the world. He was impressed by the beauty of this clock and by its practical value as an attraction.

The inspiration which Mr. Hearn received in Edinburgh was translated into action on his return to Canada. The Niagara Regional staff were commissioned to design and construct a suitable floral clock to be located at the Queenston Generating Station in keeping with the surroundings.

Mr. Duncan will have the honor of supervising the actual construction of Hydro's clock at Queenston, and will be in charge of the mechanical and electrical installation work. It is expected that it will be the largest floral clock in the world—and all information indicates that there is no other such timepiece in existence with a full sweep hand or chimes. It is scheduled to be completed early this summer.

The claim to the distinction of being the biggest floral clock in the world is



based on all available information about other flower timepieces. The "grand-daddy" of them all is the Edinburgh clock. This clock was constructed about 1903 by the then city gardener, the late Mr. McHattie. The dial of the Edinburgh clock is roughly ten feet in diameter, so Hydro's floral clock will be almost four times as large.

Other floral clocks are reported to be located in Montreal; Southend, England; Ostend, Belgium; Kursaal-Interlaken, Switzerland; Pasadena, California; Springfield, Mass.; Detroit, Michigan; and Washington, D.C. The clock in the United States capital is said to be 26 feet in diameter, and to have the distinction of being the largest in the world. However, the diameter of Hydro's flower clock at Queenston Generating Station will "top" this by 12 feet.

The color scheme of Hydro's floral clock will be pleasing to the eye. Non-blooming colored leaf plants will be combined with flower-bearing plants in an attractive arrangement of contrasting colors that should delight all flower lovers.

The centre portion of the face of the clock will be composed of approximately 12,500 green and yellow, and reddish and green alternanthera plants. This centre section will comprise an area of roughly 506 square feet, and alternanthera plants are being chosen for the color of the foliage. For the same reason, santolina plants are being selected to form the numerals. About 5,300 santolina plants will be used covering an area of about 109 square feet.. Blue alyssum, covering about 30 square feet and requiring 180 plants, will form the dots. The white circle will be composed of 900 white alyssum plants comprising 150 square feet. The outside circle will contain various colored petunias, about 1,200 in number and occupying a space of 200 square feet.

May Vary In Floral Arrangement

Those in charge of the horticultural work predict that the face of the clock may vary in its floral and plant arrangements from year to year, and actually should become progressively more attractive. There will be plenty of space for the working out of the plant designs because the total area of the clock face will be approximately 1,130 square feet.

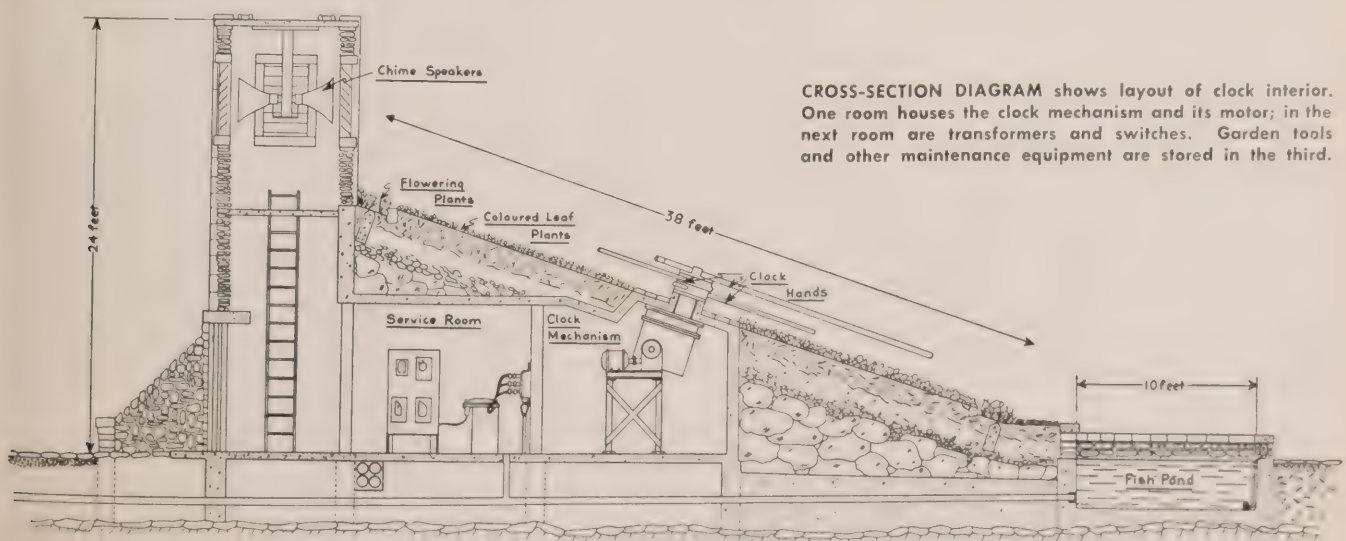
Each year the more than 20,000 plants and flowers required for the clock face will be grown during the winter in the Commission's Niagara Regional greenhouses. This will be achieved through propagation starting from the original stock this year. Each spring the flowers and plants will be transplanted back to the face of the clock to adorn the timepiece through the summer and fall.

Under the clock, forming the concrete foundations, there will be three small rooms—one to house the clock mechanism and its driving motor, another to house four transformers and switches to supply the necessary power for this installation, and the third to store the

(Continued on page 27)



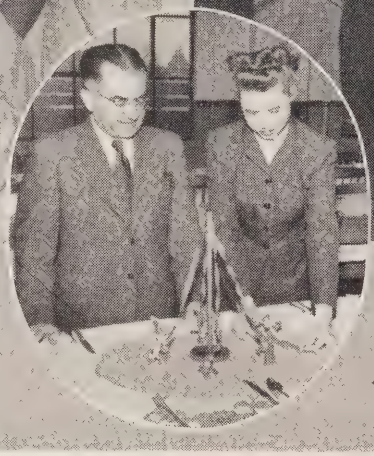
MINIATURE MODEL of the floral clock receives finishing touches from its designers, Pat Ryan (left) and Walter Ewart. Mounted on plywood board, model is scaled at 3/16" to 1 foot. Dyed sawdust simulates grass, and colored pencil shavings are used to represent the flowers.



CROSS-SECTION DIAGRAM shows layout of clock interior. One room houses the clock mechanism and its motor; in the next room are transformers and switches. Garden tools and other maintenance equipment are stored in the third.







VISIT HYDRO LABORATORY

PLAYING host to members of the Ontario Chapter, Western Section, of the International Association of Electrical Inspectors, the staff of the Approvals Division of Hydro's Strachan Avenue Laboratory recently organized a conducted tour through the Division for delegates attending the Association's spring meeting.

The visitors saw, in action, various tests carried out, on behalf of the Canadian Standards Association, to ensure safety in the use of electrical equipment and apparatus. Some of the demonstrations are pictured on this page.

Following the tour, dinner and entertainment were provided for the delegates in the Laboratory cafeteria.

Committee in charge of the affair included F. R. Whatmough, Chairman; D. C. King, Demonstrations; J. J. Donnelly, Dinner; A. Wanless, Entertainment; H. L. Freeman, Registration; N. A. Cockburn, Program.

In charge of decorations for the dinner was Miss Shirley Haines, who is seen in the inset photo with Mr. Whatmough.





AHEAD OF SCHEDULE

(Continued from page 8)

lines to the Commission's transformer station at Kipling, and from there on through Burlington to Westminster transformer station near London for distribution throughout Southwestern Ontario. Another line is being built from Des Joachims via Minden and Barrie to the Westminster transformer and frequency changer station near London. Until this second transmission line is completed, consumers in Southwestern Ontario will receive the benefits from Des Joachims from the first 230,00-volt line which will be carried through Richview switching station four miles north of Kipling, to Burlington, and then on, via Mount Hope, to a tie-in with the 230,000-volt line from Allanburg to Westminster.

Future Prospects

While the present $592 million construction program to add some 1,600,000 horsepower to the Commission's resources is scheduled for completion in 1952, present indications all point to the need for still greater Hydro expansion in the almost immediate future. Ontario is on the march on all industrial fronts. Vast, virgin areas, rich in natural resources, are still untapped. Growing cities, towns and villages beckon the industrialist and thousands of acres of fertile land awaits the plow. All these great potentialities underscore the need for more and fully adequate supplies of low-cost power. Hydro must, therefore, plan for the greater tomorrow.

These plans are already taking shape. One phase is to be found in the historic and significant treaty signed by Canada and the United States in February of this year. This treaty, superseding all previous treaties, governs the diversion of Niagara River water for the next 50 years and, when ratified by the U.S. Senate and the Canadian Parliament, will make it possible for both countries to develop additional power in the Niagara Falls area. So far as Hydro in Ontario is concerned, it will mean well over 600,000 kilowatts (800,000 hp.). This together with the 375,000 kilowatts (500,000 hp.) generated at the Queenston-Chippawa development — Hydro's largest plant — and the output of other Ontario and American stations, built and contemplated in the vicinity, will make the Niagara area one of the world's largest producers of hydro-electric power.

Other significant plans are also underway. Recently a joint board, comprising representatives of Ontario and the neighboring province of Manitoba, was appointed to study the possibilities of developing a number of power sites in the general vicinity of the international border. These sites include Boundary Falls on the Winnipeg River, and Kettle, Oak and Manitou Falls on the English River. It has been estimated that a total of 182,000 kilowatts could be developed at these sites. In addition, all indications point to 79,000 kilowatts being obtained from three other sites on the Mississagi River, near the present Tunnel project.

St. Lawrence Power

While all these plans are important in relation to meeting increasing demands for more power, there is a growing recognition of the fact that the projected development of the St. Lawrence is a "must" so far as both Canada and the United States are concerned. This development would make available an additional 1,100,000 horsepower to Canada and a like amount to the United States. Such a bloc of power would bring still greater benefits to Canadians and Americans alike. Fully adequate supplies of power represent not only a vital stimulus to the peacetime enterprise of both countries but they can assume tremendous significance in a world in which free and democratic people must be vigilant and prepared to meet "any emergency."

A decision to proceed with the St. Lawrence would have much more than practical and realistic implications. It would be in a sense, symbolic of the desire and intention of two peoples, who speak the same language and share the same ideals to go forward together in a spirit of cooperation to a new and greater destiny in the years ahead.

Test New Station at Tillsonburg

DESIGNED to provide still more efficient Hydro service to consumers in Tillsonburg and surrounding areas, tests were recently undertaken at the new Tillsonburg Transformer Station.

This $304,000 Hydro project, consisting of one three-phase transformer having a 25- and a 60-cycle capacity of 8,000 and 14,500 kva, respectively, will be used in serving some 6,700 consumers in the municipalities of Tillsonburg, Norwich, Otterville, Burgessville, Vienna and Port Burwell, and in the townships of North and South Norwich, Dereham, Middleton and Bayham.

The transformer station will be supplied from either of two 115-kv circuits now in operation between Queenston and St. Thomas, and will transmit the power received, at 26,400 volts, to distribution stations at Tillsonburg, Norwich, Ostrander and Vienna.

Noon Hour Dinners Popular

NOON hour is still the popular time of day for eating dinner at Kitchener. Public Utilities officials have come to that conclusion after examining city load charts. The peak load comes about 11:30 in the morning, they have found. In some larger centres throughout Ontario, it comes at approximately five p.m. They attribute the noon-hour peak in Kitchener to the fact that business people can go home to dinner more easily than people in larger cities. Figures presented recently at a commission meeting showed that the demand for Hydro power had almost doubled locally in the past decade.

"Maybe the local people appreciate the rapid and convenient transportation service provided by the electrically-driven trolley coaches operated by this commission," General Manager S. E. Preston commented recently.

SECOND YEAR AS CHAIRMAN

FRANK RAYMOND KAUPP is serving his second year as Chairman of the Merritton Hydro-Electric Commission. Born in Merritton in 1922, he attended both Public and High schools in the town. He also took a correspondence course in Electrical Engineering from the British Institute of Science and Technology. He is now Manager of the Kaupp Electric Company.

Mr. Kaupp is a member of the Electrical Contractors Association; American Institute of Electrical Engineers and the Canadian Legion. During the war he served nearly four years in the Royal Canadian Electrical and Mechanical Engineers. In sports he favours baseball and basketball.



FRANK R. KAUPP

Sees Restrictions Lifted Shortly

Fine Co-Operation Of Retail Merchants Lauded By Chairman Saunders — Addresses District No. 5 O.M.E.A. — Sees Greater Era Of Expansion Ahead Of Ontario

REMAINING power restrictions will be lifted as quickly as possible, Hydro Chairman Robert H. Saunders assured District No. 5 O.M.E.A. delegates in attendance at the spring meeting at Welland on May 10. At the same time, he expressed warm appreciation for the splendid co-operation on the part of the retail merchants in observing these restrictions, and helping conserve power.

The Chairman pointed out that although the power situation was greatly improved over that of a year ago, it was still necessary to protect the peak demand each and every day. However, he said, it was the Commission's belief and hope that within the next few weeks, and most assuredly in the next two months, that the balance of the restrictions would be lifted.

"I think," said Mr. Saunders, "we can look forward to the same degree of industrial development in this Province in the days to come as we have experienced during the past 20 years. It must be remembered, however, if we are going to advance industrially in the coming years there must be the same impetus that we have had during the past two decades and that is low-cost electric power in abundance."

It was not merely a case of meeting the demand, he said, but of having a reserve of energy sufficient to take care of low water periods, breakdowns and any other emergency that might arise. This was actually one of the fundamental reasons for Hydro being a public ownership enterprise. Private enterprise, he continued, was considered successful if it could meet the demand and not have any surplus. In other words, receive payment for each unit of produce brought on the market. It was the function of Hydro, however, he said, to protect the people and to have a surplus so that each and every municipality could say to industry that they could be supplied with power. He went on to point out that last year the Commission had spent some $100,000,000 in purchases alone, and of this amount $81,250,000 had been spread among the factories in practically every municipality across the Province. He also pointed out that it was expected that $156,000,000 would be spent on the Hydro's construction program this year, most of which would be spent in Ontario.

At another point, the Chairman stated that the first two units at the new Des Joachims development would be placed in service in June. Initial delivery of power would be received from the Pine Portage development while the Tunnel development would be in full operation. Hydro, Mr. Saunders said, had no less than 380 separate and distinct jobs going on

(Continued on page 22)



THESE ARE the O.M.E.A. officers for District No. 5, reading from left to right: T. W. Houtby, Welland; F. R. Cavers, St. Catharines; William Watterson, Welland, Chairman of District No. 5; K. C. MacLeod, Stamford Twp.; Thomas Barnes, Niagara Falls; W. B. Elliott, St. Catharines; Roy Pierson, Brantford Township, Past President of District No. 5; D. P. Cliff (seated), of Dundas, President of the Association this year.

DURING A lull between the afternoon session and evening dinner these three delegates enjoy a quiet smoke. Reading left to right: G. F. Pownall, Mimico; A. O. Leslie, Scarboro Twp.; A. G. Jennings of East York.



ON THE outside looking in! H. D. Rothwell, W. Ross Strike and M. J. McHenry of the H.E.P.C. peek in at Thomas Barnes, S. E. Thomson of Niagara Falls; G. F. Hutcheson, Huntsville; and D. Flannery, Niagara Region.



LOOKS LIKE the boys are reflecting on their appearance! Reading from left to right they are: T. W. Houtby, Manager; Mayor Harry Diffin; and Cecil Swayze, Commissioner, all representing the Welland Hydro-Electric Commission.



THERE'S NOTHING like a good story to help digest the dinner. Here we have Mayor Diffin (left) Hydro Chairman Robert H. Saunders; H. W. Walker, M.L.A., Welland Riding.



SEES RESTRICTIONS

(Continued from page 20)

throughout the province this year, each employing from 10 to 2,200 men.

Proceeding, the Chairman said that the Commission was looking forward to the ratification of the Niagara Treaty within the next few weeks. He also assured the delegates that the scenic beauty of the Falls would not be interfered with in any way. It was almost a certainty, he continued, that the St. Lawrence Development would eventually come and it was hoped that it would be in the not too distant future. Speaking briefly on the standardization of rates, Mr. Saunders stated that this matter was under complete study at the present time and when the report was finished the various municipal commissions would be contacted to obtain their views.

W. Ross Strike, Second Vice-Chairman of the H.E.P.C., pointed out that the demand for electricity was still increasing and, according to leading industrialists, an era of still greater industrial expansion was ahead of Ontario. He pointed out that the Hydro was exerting every effort to meet the growing demands for power.

M. J. McHenry, Director of the Commission's Consumer Service Division, spoke briefly on the matter of standards for municipal systems, pointing out that a joint committee of the O.M.E.A. and A.M.E.U. was working with the Commission's Engineering staff at the present time on a set of standards or regulations governing the design and construction of distribution systems. Conclusions emerging from these deliberations, he felt, would be of mutual benefit to Hydro municipalities and to the Commission's engineers.

D. P. Cliff of Dundas, President of the O.M.E.A., declared that, in his opinion, Hydro was the greatest co-operative enterprise ever known. He felt it was a privilege to be a part of such a dynamic organization and he was looking forward to his term of office on the O.M.E.A. executive. Mr. Cliff stressed the importance of district meetings. Ideas advanced at these meetings, he said, often resulted in important resolutions going forward to the parent body — resolutions which sometimes culminated in important legislation being enacted.

The O.M.E.A. President took the opportunity of introducing George F. Hutcheson, Huntsville, immediate Past President, who is acting as Secretary of the Association following the resignation of Mrs. Kathleen Kestell. It was also learned that Mr. Cliff had resigned as Chairman of District No. 5, with William Watterson of Welland taking his place.

Others who spoke briefly at the afternoon session were Mr. Hutcheson and Albert Jennings of East York.

Following the invitation of Mr. Cliff, it was decided that the Fall meeting would be held at the Dundas Golf and Country Club in October.

During the afternoon session the following resolutions were passed:

That District No. 5 request the O.M.E.A. to go on record as being opposed to a flat rate for wholesale power and that The Hydro-Electric Power Commission be so notified;

That this District request the executive of the O.M.E.A. to instruct the chairman of any meeting where a vote is to be taken on any subject pertaining to financial matters or matters of policy which will affect any municipality, to advise the delegates of procedure of taking the vote and reading to them the pertaining section of the constitution of the O.M.E.A.;

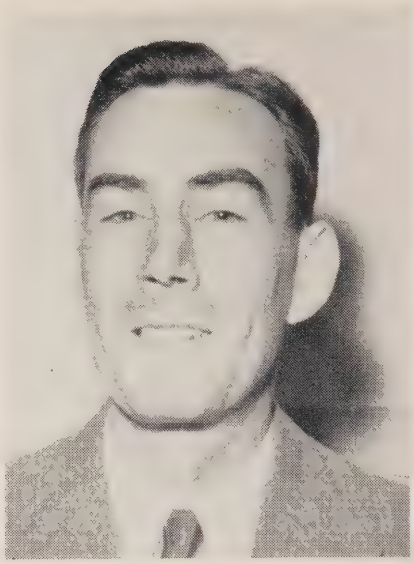
That a committee of three be appointed to bring in a paper of not more than two subjects for guided discussions at the next district meeting.

STEADY GROWTH

Revealing that there were 269 new Hydro consumers in Chatham in 1949, and also pointing out that the number of kilowatt-hours used was six per cent higher than the previous year, R. S. Reynolds, Manager of the Chatham Public Utilities Commission, stated in his annual report that this increase showed "a steady growth in the city."

The 6,546 consumers used, 46,444,000 kilowatthours during the year, he pointed out, a total which included electricity for street lighting as well as the demand made upon the commission by the rural district.

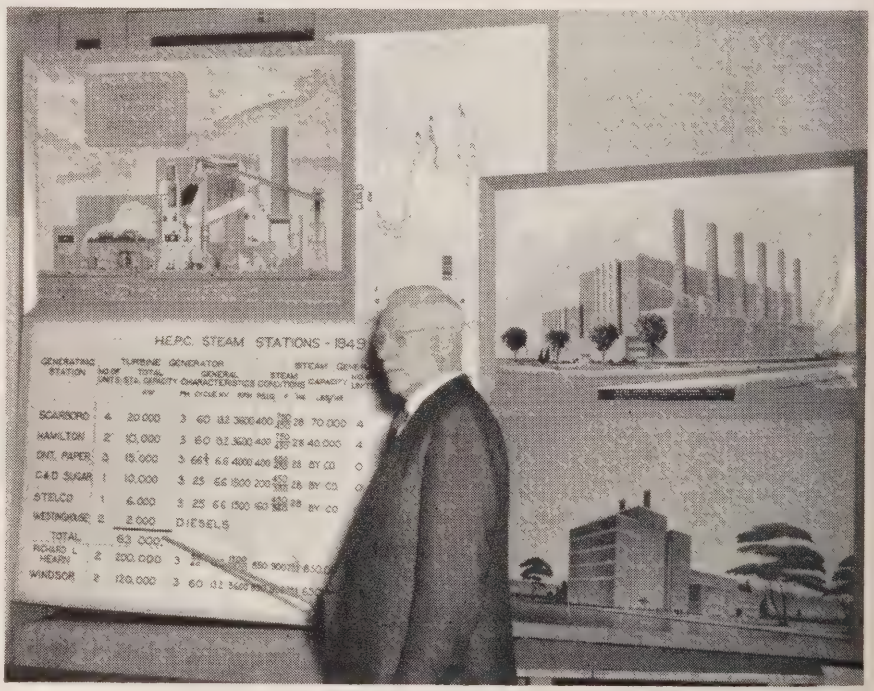
MERRITTON'S MAYOR



LESLIE H. SKIPPER

LESLIE HERBERT SKIPPER has been Merritton's popular Mayor since 1946. Prior to that he was a Councillor for two years. Born in Fletcher, Ontario, he attended schools in Ridgetown and Chatham, and in the business world he is a draftsman. He is married and has one son and two daughters.

His special interests include teaching Sunday School and for the past eight years he has been Superintendent. He is a member of the Masonic Order and his hobby is stamp collecting.



S. L. FEAR, Liaison Engineer, speaking recently at a meeting of the newly-organized Kitchener branch of the Engineering Institute of Canada, illustrated his talk on "Steam Stations for Hydro, 1949-52" with charts, diagrams, and slides. Tracing the development of Hydro's connection with steam stations from the original studies made in 1925, he also described the two large stations presently under construction at Windsor and on the Toronto waterfront.

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



This is the season to dig! Some men dig dew worms and hie to the nearest river bank to fish. Other men dig gardens and then plant vegetables. Homemakers dig into corners, scrub, then wrap and store winter paraphernalia. You know you can be sure of having your clothes packed safely in moth crystals, but one can never be quite sure of fish for supper, nor of a planned garden project!

* * *

The planting season has begun late this year. In fact there is time yet to sow or put in plants. For the best nutritional value, select bright coloured vegetables as there is more Vitamin A in vivid coloured ones. Red-cored carrots, deep red beets, yellow onions, and cabbages that will be green to the core are best. Read labels carefully of packaged seeds or catalogue lists.

* * *

Plans for shower parties are always exciting at this time of the year. Fruit salads arranged in cereal bowls on leaves of lettuce are always attractive as well as tasty. Begin with a spoonful of peanut butter sprinkled with cocoanut, then place a spoonful of cottage cheese mixed with maraschino cherries and continue with circular arrangement of alternate fruits, sections of grapefruit, quarters of peaches, and strawberries, stems on. In the centre, place a small diamond-shaped mold of lemon jelly and accompany this dish with a fruit dressing. Serve with melba toast and cheese tea biscuits. Tea or coffee with assorted cookies may complete the refreshments for the special occasion.

* * *

For a quick fruit dressing mix equal parts of liquid honey and lemon juice.

* * *

Who gets the largest share of ice cream? Well, now that ice cream will be packaged in cubes everyone should get the same size serving. By the way, to keep packaged ice cream firm take it out of the carton and place the servings or slices in a freezing tray, cover with wax paper and keep in the freezing unit of an electric refrigerator.

* * *

Make flavoured pastry for fruit pies. Substitute lemon or orange juice for water in the fat and flour mixture and add ½ teaspoon grated orange or lemon rind. Such flavours blend delightfully with fresh fruit filling.

* * *

Did you know that allspice is the dried pimento (a member of the myrtle plant) grown in southern Europe as well as in some places in the United States? The dried leaves and flowers have a combined aroma of nutmeg, cinnamon and cloves, hence it is labelled allspice.

* * *

Pimento should not be confused with pimiento, which is pickled green pepper.

* * *

Hasten the thawing of meat by sprinkling the amount of salt you want for seasoning over it. Ground meat will be ready to shape into patties much sooner if you do this (about 40 minutes).

* * *

Pineapple in a jelly mold will set only if the fresh cubed fruit is brought to a boil in a thin syrup and cooled before adding to packaged gelatine.

* * *

Fresh fruits and vegetables look attractive in cellophane packages. However, homemakers would be well-advised to remove oranges, tomatoes, strawberries or fresh peaches from under the cellophane and store in an electric refrigerator in a crisping pan. Spoilage may begin quickly if raw fruits have no circulation of air.

* * *

By the way, your vacuum cleaner needs to breathe. That means that the bag should be cleaned out after each day's use. Brush out the bag or change the filter. It is not only good assurance of a thorough job next time, but prevents the motor from overworking.

* * *

When you have spillovers on an electrical element, never use salt. Sprinkle a little cinnamon on the smoke and turn off the element. Be sure to clean the range when cool, do not corrode the element.

* * *

Flower vases become stained easily. To remove the marks fill the receptacle with vinegar and add one-quarter cup of salt to one cup of vinegar, then let this stand over night and shake well in the morning. If need be, use a brush to remove the softened sediment. Always wash glassware in a solution of ammonia water and dry immediately to give it that sparkle.

* * *

Precaution for nylon garments: do not try to press out a wrinkled seam with the iron. It is wise to stretch seams gently when damp to prevent puckering.

* * *

It won't be long before stifling weather sets in and only the blade of a fan seems to be moving the air. By the way, we should keep an electric fan lubricated with a little sewing machine oil and let it seep in before plugging the fan into an outlet. Always place the fan in a secure place where people cannot trip over the cord. At night, place it three feet inside the window facing out so as to bring fresh air into the room.

* * *

Warm, humid atmosphere is the place where undesirable green molds grow quickly, especially on bread. If you use a ventilated bread box that is kept dry and sweet-smelling, bread, cakes and rolls will keep better.

* * *

If you keep things under an oilsilk cover, it would be advisable to leave one end open, or make a ventilated bag for cereal products.

REFRIGERATOR CHEESE CAKE

1. Soften 2 tbsps. gelatine in ½ cup cold water for 5 minutes.
2. Combine 1 tsp. salt, ½ cup sugar, 1 tbsp. cornstarch, with ½ cup milk in top of double boiler and stir until sugar is dissolved.
3. Add 2 beaten egg yolks to milk mixture and stir while cooking until thick.
4. Remove from electric element, add soft gelatine and cool.
5. Add 2 cups cottage cheese, 1 tbps. lemon rind and ¼ cup lemon juice.
6. Fold in 2 beaten egg whites and 1 cup whipped cream.
7. Pour into casserole lined with crumb crust and top with ¼ cup chopped nuts.
8. Crumb Crust: Blend well—2 cups graham cracker crumbs with 1 tsp. cinnamon, ⅓ cup sugar and ⅓ cup butter. Pat into casserole or pie plate.

Accent On Mobility

By JOHN MURPHY
Frequency Standardization Division



HANDLING OF such large types of equipment as refrigerators and washing machines is greatly facilitated by the use of trucks fitted with hydraulic tailgate hoists as shown here.

HYDRO'S Frequency Standardization Program is essentially a highly mechanized operation. This is the reason why many vehicles, finished in the striking "Hydro Red," are becoming familiar on the highways and avenues of the districts in which the program is now being carried out.

In order to effect the 60-cycle changeover expeditiously and efficiently, men and materials must be moved about the cutover areas with a minimum of delay. This is feasible only through the medium of motor transport.

A Formidable Problem

When the standardization program was in the planning stage, a formidable problem confronted the engineers responsible for the organization of the transport facilities. Some idea of the magnitude of their task may be formed from the many types, shapes and sizes of frequency sensitive electrical equipment that have to be handled quickly and efficiently. Spare parts have to be available near the scene of operations, also certain types of tools and changeover equipment. Meticulous research and planning were involved in organizing the complete fleet of vehicles now in service, and designed to be an integral part of the huge project until its completion some ten or twelve years hence.

Start In London In June

Standardization has been completed in Scarborough Township, the site of its official inauguration, and work is proceeding in the balance of Area "A" which includes East York and North Yonge Street stretching north to Sutton on Lake Simcoe. January saw the launching of the changeover in the Sarnia district and June witnessed its beginning in London.

Setting A Pattern

Since Area "A" was number one on the standardization timetable the way in which various vehicles have been, and are being used there may be taken as an indication of the pattern to be followed as the program gathers momentum in the months ahead in the other 25-cycle districts of Southern Ontario.

The Area Office of the Commission's contractor in East York is the headquarters of a motor fleet of nearly 300 vehicles. They range in size from the versatile jeep to large tractor-trailer units used for carrying heavy equipment such as 250 kilowatt frequency changers.

Preliminary Surveys

In preliminary surveys of industrial and domestic consumers, the vehicles in most frequent use are half and one-ton express trucks. One-ton panel trucks are used for transporting refrigerators, and for this job are fitted with special racks to secure the equipment against damage. Other trucks of this type are stocked with spare parts, some carrying oil burner parts, others washing machine parts, and so on. Thus, the changeover technicians are always assured of a readily accessible source of the items they need for their routine work. It is also the practice to equip one truck with an overall supply of spare parts and reserve this vehicle for service and trouble-shooting duty.

Special Tailgate Hoist

Heavier types of equipment such as very large refrigerators and washing machines are handled on two-ton stake trucks equipped with a special tailgate hydraulic hoist. The heavier types of frequency sensitive motors are transported in a two-ton stake truck which is equipped with an "A-frame,"—a steel beam mounted over the platform of the vehicle and projecting about three feet over the tailgate. A travelling pulley operating on this beam makes the load-

ing and unloading of heavy equipment relatively easy.

Another type of mobile equipment playing a leading role in frequency standardization is the trailer. Some of these vehicles serve as travelling offices, strategically located in the cutover areas as field headquarters. Others have been equipped as machine shops complete with lathes, punches and drill presses used for work on equipment that cannot be changed over on the consumer's premises.

Still other trailers have been fitted out by the Commission's staff as mobile Clock and Fan Depots. These appliance shops on wheels carry a wide range of new 60-cycle clocks and fans which may be secured by the consumer by exchanging his old 25-cycle clock or fan and paying a small exchange price. These mobile depots will be used largely for the convenience of rural consumers.

Trailer Warehouses

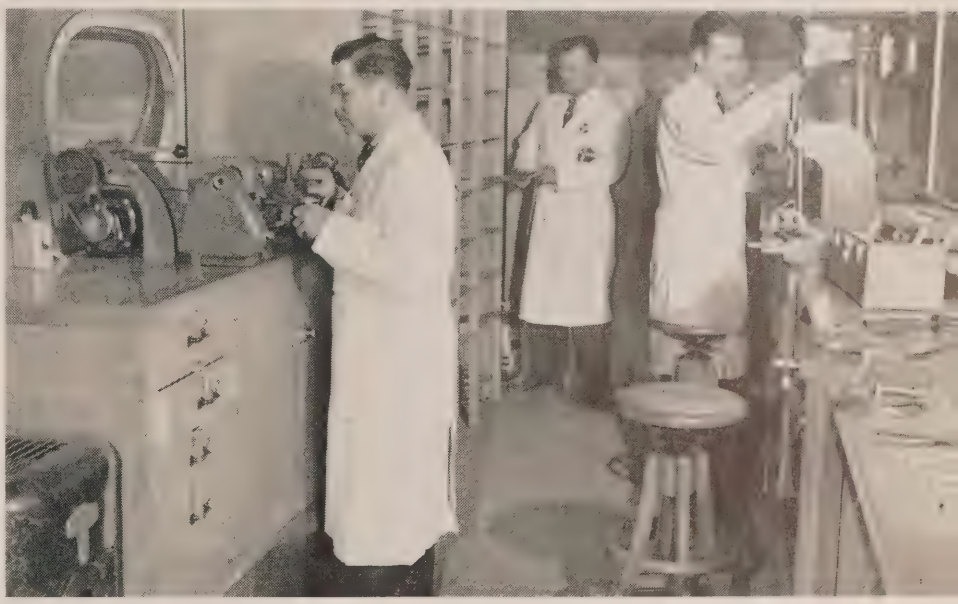
Trailers are also being utilized as warehouses in the rural areas carrying large quantities of spare parts and other standardization equipment. This obviates the necessity for technicians making time-consuming trips back to the central warehouse for needed replacement parts. Another important use for trailers—although of a slightly different type—has been to carry gasoline motor-driven generators and portable frequency changer units. The latter items range from 5 to 250 kilowatts capacity, some complete with transformers and switching equipment. Welding machines and water tanks have also been mounted on trailers.

In addition, jeeps are being used to advantage in carrying out the Frequency Standardization Program. In a single month, one jeep successfully performed no less than 72 towing operations. Dur-

★



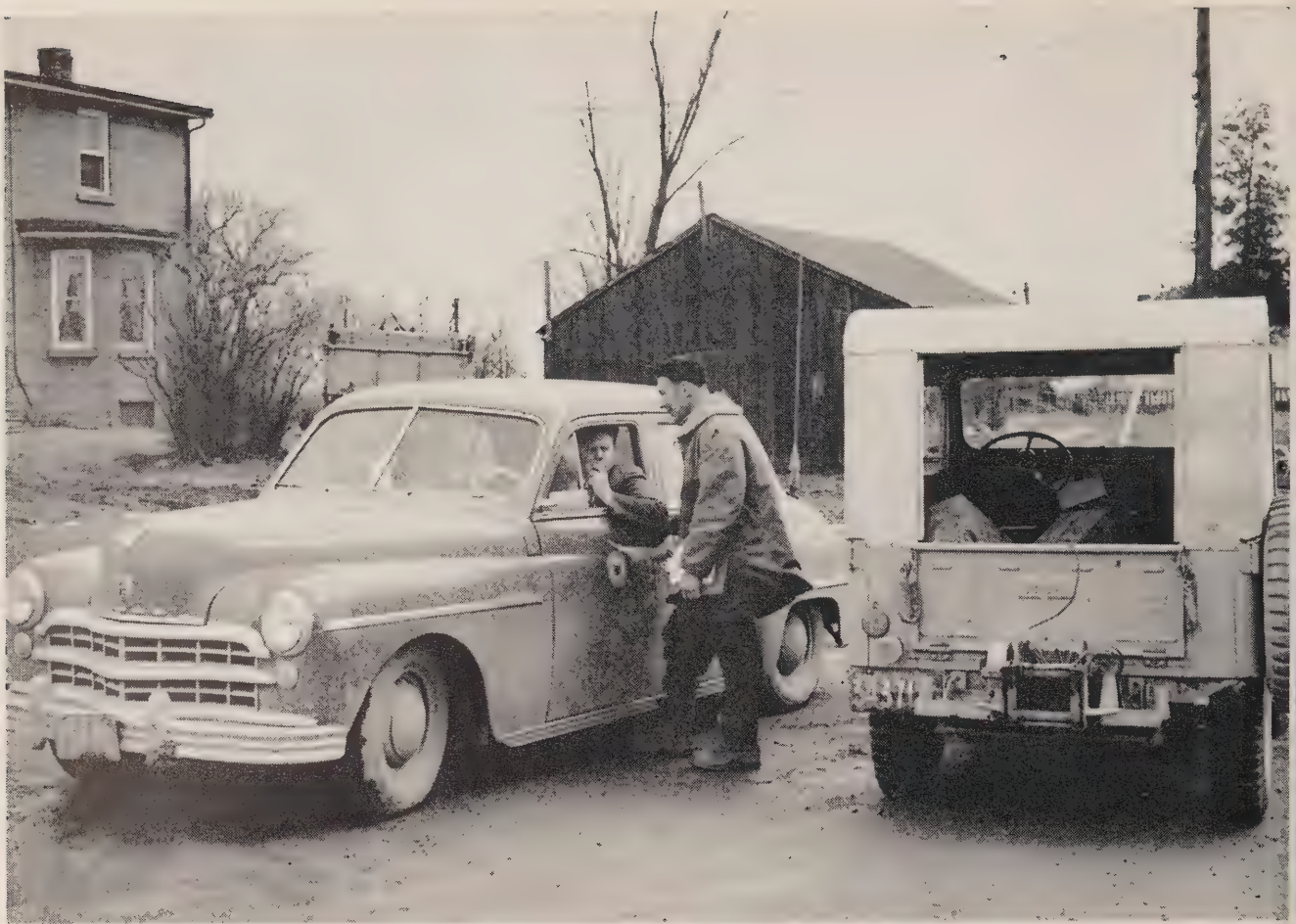
MEMBERS OF the contractor's staff in this photo are unloading a motor from an A-frame truck fitted with a travelling pulley. This facilitates the handling of heavy equipment.



TECHNICIANS MAKING change-over adjustments to equipment in one of the trailers fitted as a mobile field workshop. Other trailers serve as travelling offices (see photo below).



IN RURAL areas trailers serve as field headquarters for the standardization crews. Office trailer is shown left while at right is the completely equipped parts warehouse.



STANDARDIZATION WORK in rural areas often poses a problem due to road conditions. A jeep is kept on standby duty for towing and other emergencies. Here driver checks calls with radio car. Cars and trucks equipped with two-way radio are proving invaluable in standardization.

ing the latter part of the winter these vehicles were fitted with snow plough attachments and rendered valiant service in keeping roads passable for standardization crews.

Equipped With Two-way Radio

Another innovation of the mobile operations has been the introduction of a limited number of cars and trucks equipped with two-way radio. In Area "A" east of Toronto—two radio cars are on duty day and night answering service calls. Both cars are in operation during the day, while another crew comes on duty in the afternoon and works with one car until midnight. In Area "B," near Sarnia, radio trucks have been of material aid in speeding up the changeover in the rural areas. One truck is stationed near the trailer office while the other cruises constantly about among the cutover crews. When any difficulty is encountered, calling for a special part or technician, the information is passed by radio back to the trailer. The service crew is then dispatched immediately, or in some cases, the field truck may pick them up and rush them to the required location. This mode of operation is of particular value in rural areas having a

(Continued on page 29)



CONSUMER CHOOSES new 60-cycle clock from wide selection in Hydro's mobile Clock and Fa Depot. These units are strategically placed for the convenience of consumers in rural areas

SEE IT WITH FLOWERS

(Continued from page 17)

necessary tools for maintaining the gardens.

To set or correct the hands of the clock, on the rare occasions due to power failure, is a job of some magnitude, and special features had to be incorporated in the design to permit adjustment of the hands independent of the motor.

This hand-setting device is installed near the clock mechanism located underneath the clock. Consequently, the operator could not see the position of the main clock hands. To meet this problem an auxiliary set of hands will be installed in this room which are geared to the main hands, and, therefore, will follow the position of the main hands.

To set the main hands, the driving motor is disengaged and the hands moved by a crank to the required position.

A unique feature of this clock is that it has a sweep second hand, and is believed to be the only floral clock so equipped. The second hand and minute hand will be driven by worm gears approximately two feet in diameter, and the entire driving mechanism will operate in an oil bath.

Westminster Chimes

Behind the clock dial, a tower, eight feet square and twenty-three feet high, will be constructed of rough and cut stone, to house the loud speakers which will broadcast the time and the Westminster Chimes. A standard set of Westminster Chimes geared to the clock mechanism will sound each fifteen minutes and strike the hour. The sound from the chimes is picked up by a microphone, amplified and fed to the loud speakers to reproduce the effect of a large clock tower.

Before all the details were worked out a model was made. It was constructed on a ½-inch plywood board and is a miniature of the actual clock, the scale being 3/16 inch to the foot. The composition of this model is most interesting. Grass was simulated by dyeing sawdust with showcard coloring and glueing it to the board. The flowers on the face of the clock were made the same way, using pencil shavings instead of sawdust. Trees were shaped out of modelling clay dried on to match sticks. The surface of clay was then covered with glue and sprinkled with dyed pencil shavings. The shrubs were made in the same way except that they were not formed on sticks. Ivy on the tower was obtained by streaks of glue painted on and sprinkled with dyed sawdust. The flagstone walks were formed with modelling clay smeared on and scratched with a pointed tool. The rock garden was shaped with modelling clay and studded with ¼-inch crushed stone, and the clock tower was formed from modelling clay, cut to shape with a pocket knife. The final result was a model so realistic that an excellent idea could be obtained of what the big floral clock actually will look like.



PRESENT "GRANDDADDY" of all floral timepieces is the one pictured above. Located in Princes Street Gardens, Edinburgh, Scotland, it was constructed in 1903. The dial is approximately 10 feet in diameter. Hydro's new floral clock at Queenston will be four times as large.

It, therefore, can be readily appreciated that no efforts have been spared in planning Hydro's floral clock. It is hoped to make it a worthwhile attraction, which will be a "must" on the itinerary of visitors to the Niagara Falls area.

Landscaping

Considerable study has been given to producing a suitable landscaping effect about the clock. A parking area, access roads, and a circular flagstone walk seven feet wide to encircle the clock will be constructed. The sloping sides forming the clock will be laid out to form a rock garden of flowers and dwarf evergreens.

In front of the clock to prevent visitors gaining access to the clock face, a waterway or fish pond will be constructed.

As the Commission's Queenston plant attracts some 45,000 visitors each year, it was considered necessary to provide accommodation for these visitors. Consequently, a tourist building containing ladies' and gentlemen's rest rooms and an information centre will be constructed at the rear of the clock. It is also planned to provide park benches located about the clock.

The area will be illuminated and the clock flood lighted, thus providing a night attraction in the hope of reducing the serious congestion now centred at the Falls.

As the years roll by, it is felt that the floral clock may be expected to become a noted landmark. And this will accentuate its functional value as an attractive timepiece and as one of the most unique guideposts to the Commission's largest generating station.

Manitoba Needs Your Help

THROUGH the medium of press and radio, Ontario citizens, in the past few weeks, have been made painfully aware of the sad plight of their Manitoba neighbors, many of whom have lost their homes and possessions—some, even their means of livelihood—before the onslaught of the Red River. As this issue goes to press, the flood waters are beginning to recede and people in the higher areas around Winnipeg are beginning to return to their homes. During this phase of the emergency, these people, more than ever, need the assistance of Canadians in the other nine provinces. There is a very great need for clothing, home furnishings—particularly mattresses, sheets and blankets—and, of course, money. Any person wishing to contribute to the Manitoba Relief Fund should contact their branch of the Canadian Red Cross Society or local representatives of the Salvation Army if they wish to make donations of clothing or bedding while financial contributions are being received by all branches of Canadian chartered banks.



Beast Bests Barrier

A FERRET, Hydro's newest and most unusual "worker," recently saved the day for the Paris Public Utilities Commission.

The local commission found it necessary to install a new three-conductor, lead-covered cable through a duct between the substation and cable rack, a distance of 260 feet. After trying for several hours, workers found that, because of an obstruction, they could not fish a draw line through the duct in order to pull the cable through. Adding to the problem was the fact that a carload of poles had been recently unloaded at the pole rack, located directly above the obstruction point.

Deciding to try some other method, George Boucher, Superintendent, put Mr. Ferret on the payroll at a cost of $2.50. Placing a piece of meat at one end of the duct, and Mr. Ferret at the other with a thin string around his neck. Three and one-half minutes passed and then ferret, meat and string were at the same place! The string was removed from the animal's neck and a heavier string was pulled through, bringing with it the obstruction which proved to be a large piece of sheet lead that had been lodged across the tile.

Saving, according to Mr. Boucher, approximately sixteen man-hours of labor. This may prove that where there's a will—or rather a ferret—there's a way.

HONOR SUDBURY DISTRICT HYDRO DEAN



NO EXCUSE for the big ones to get away now! Alex Skene, "father of Hydro in Sudbury district," is presented with fishing rod and other gifts at banquet honoring his retirement after 46 years of notable service in the district. Mr. Skene had directed power operations in the district since 1904, until 1930 as manager of the Wahnapitae Power Company. Making presentation is J. M. Hambley, Dir. of Operations, as Mrs. Skene and R. O. Standing, Toronto, watch.

SOUTHAMPTON REVENUE

Power distribution revenue during the past year amounted to approximately $39,696, an increase of $2,514 over the previous year, according to figures recently released by the auditor for the Southampton Hydro-Electric Commission.

Comprising some 705 domestic 111 commercial and 14 power consumers, the Southampton Commission recorded increases of 32 and 10 respectively in the first two classes of consumers named, making a total of 830 for all classes.

BRONZE PLAQUE HONORS KITCHENER HYDRO MEN

Honoring the men responsible for the erection of the present Kitchener Public Utilities Commission building, a bronze plaque was recently unveiled by C. Mortimer Bezau, a former Mayor of Kitchener, at a brief ceremony at the entrance to the local commission building.

Bearing the names of the three Commissioners, Chairman and Mayor of that day, and also the building's architect, the tablet pays tribute to the foresight and planning of these members of the Commission who were responsible for the building's construction nearly twenty years ago.

CLAIMS DEPARTMENT

Establishment of a Claims Department for Frequency Standardization, and appointment of A. W. M. Kirkpatrick as Legal Officer and J. W. Brownlie, Claims Officer, both responsible to the General Counsel, was recently announced in a directive from R. L. Hearn, General Manager and Chief Engineer.

Pending completion of organization and detailed procedure for handling claims, originating communications in respect to Frequency Standardization, it is pointed out, should be addressed to Mr. Brownlie at 49 Bathurst Street, and originating communications with respect to other claims not covered by insurance should be sent to Mr. Kirkpatrick at Room 1403, Head Office Building, 620 University Avenue, Toronto.

SECRETARY-TREASURER OF MERRITTON H.E.C.



H. L. SAVIGNY

HUGH LESLIE SAVIGNY has been Secretary-Treasurer of the Merritton Hydro-Electric Commission for the past 10 years. Prior to that he was School Treasurer of the High School Board from 1934 to 1940.

Born at Fonthill, he attended school there and later at Port Robinson. Baseball, hockey and fishing are among his favourite sports.

PETERBOROUGH LOAD

Peterborough's peak load during March this year was 25,460 horsepower, an increase of 3,360 horsepower or 15 percent over the peak in the third month last year, Utilities Commission Manager R. L. Dobbin reported recently. Consumption in terms of kilowatthours was up from 7,401,600 in March last year to 9,139,600 —an increase of 1,738,000 or 23.5 percent.

ACCENT ON MOBILITY

(Continued from page 26)

high percentage of electrical farm equipment. Some of these items, such as milking machines and feed choppers, are different in certain respects to other pieces of equipment and their change-over sometimes presents problems which are off the beaten track. However, with the aid of the radio service trucks this work has been completed in much less time than was anticipated.

Thus, it may be seen that cars and vans, trucks and trailers are rendering an all-important service in carrying out the change-over program that will bring the benefits of a standardized 60-cycle power system to the citizens of Ontario.

SARNIA APPROVES MOBILE RADIO SYSTEM

SARNIA Hydro-Electric Commission has authorized the installation of radio equipment in four trucks and the superintendent's car. The installation, which will cost about $6,000 was discussed at a meeting recently, and will be proceeded with as soon as possible. Hydro Manager Claude McMann said he felt the new equipment would effect considerable saving in power, labor and time, and would pay for itself during the frequency changeover period, when the service trucks would be in operation, carrying out changes in wiring throughout the city.

AFTER 28 YEARS

Terminating what has been described by the *Temiskaming Speaker* as one of the longest power blackouts in the history of a town, residents of Charlton, Ontario, are again enjoying the benefits of electricity after an interruption of some 28 years.

A fire which swept Charlton and most of Temiskaming in October, 1922, was responsible for the destruction of power facilities. Completion of new Hydro lines into the town has now put Charlton on the "electric map" once again.

MERRITTON COMMISSIONER DAVIDSON

WILLIAM F. DAVIDSON, has been a Commissioner on the Merritton Hydro-Electric Commission since 1942, and its Chairman from 1943 to 1946. He was also on the Merritton High School Board for six years.

Born and raised in Merritton, Mr. Davidson received his education in Exeter and is now a retired railway agent. Fishing and bowling rank first among his special interests.



WILLIAM F. DAVIDSON

COMMISSION MEMBER FOR PAST SIX YEARS



HOWARD F. LaCHANSE

HOWARD FREDERICK LaCHANSE has been on the Merritton Hydro-Electric Commission for the past six years and was Chairman for two terms.

Born in St. Catharines he attended Public School there and the St. Catharines Collegiate. In the business world he is a salesman and is a member of the Lion's Club and the Merritton Volunteer Firemen. Mr. LaChanse is married and has one daughter.

MORE POWER IN THE NORTH

Hydro history was made at Kenora recently when power was turned on in the Kenora R.O.A., and three customers in the Rabbit Lake area received power. Dryden Area also received Hydro power recently, H. A. Burleigh, Area Inspector, announced.

Classified Ads

SERVICES WANTED

YOUNG ELECTRICAL ENGINEER with some knowledge of public utility operation (Hydro and Waterworks), town of 8,000 population nearby Toronto. Preter one with some experience and be of executive type to train as assistant to Superintendent. Write giving particulars of training, experience and salary expected. Apply Box A. Hydro News.

FOR SALE

STREET LIGHTING REGULATORS for 25-cycle operation, both indoor and outdoor. Apply London Public Utilities Commission.



Transforming The Highlands

GREAT strides have been made during the past few years to increase the electrical output as well as the consumption of electricity throughout Scotland. The £80,000,000 ($250,000,000) Hydro-Electric Scheme which is changing the face of the Highlands by establishing new industries and bringing new life to old ones is reported to be making outstanding progress.

This latest series of photographs shows construction underway in the Loch Sloy Group, 30 miles from Glasgow, which involves building of a new power plant at Inveruglas on the shores of famed Loch Lomond.

The photograph on the opposite page shows the penstocks (seven feet in diameter) leading from the two-mile long tunnel under Ben Vorlich to the generating station on the shore of Loch Lomond. This station will consist of four units with a capacity of 32,500 kilowatts each, and a 450-kilowatt Pelton wheel for auxiliary purposes.

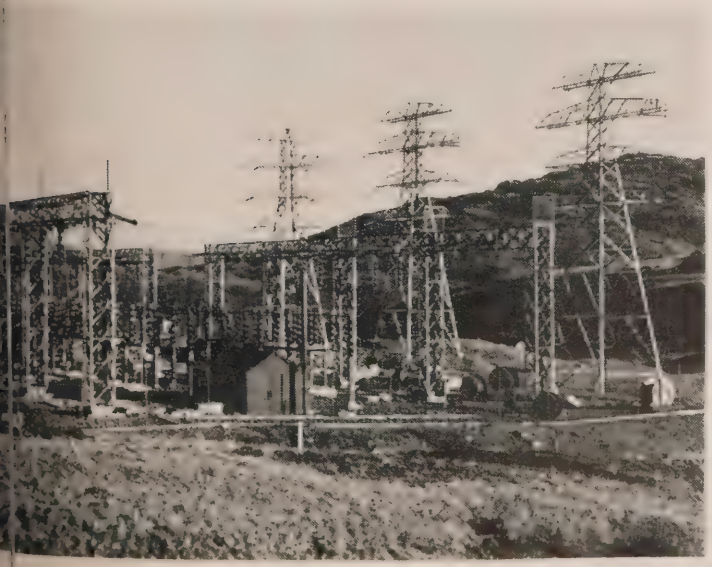


ABOVE, RIGHT—View of the downstream face of the dam across the glen at the eastern end of Loch Sloy. The dam is 165 feet high and 1,160 feet long. It will create a 1,200,000,000-gallon reservoir.

BELOW, RIGHT—This photograph shows the interior of the partially-completed generating station at Inveruglas on the shores of Loch Lomond which will have a total capacity of about 130,000 kilowatts.

BELOW, LEFT—This view shows the switching area situated in the glen above Inveruglas Generating Station. This installation will feed power into a British Electric Authority station at Glasgow.







NEW MEMBERS of Woodstock P.U.C.'s recently-organized 25-year club cast admiring glances as J. R. Sullivan, Manager, shows his new tea and coffee service to Hydro Chairman R. H. Saunders. The other seven received similar sets. Left to right, D. J. McGregor, N. McLeod, H. Forden, Mr. Sullivan, Mr. Saunders, M. ("Duke") McCutcheon, P. Kennedy, N. Copp, A. Wishart. Presentation was made at the inaugural banquet of the club.

Loyal Service

Eight Members Of Woodstock P.U.C. Honored As 25-Year Club Is Inaugurated — High Tribute Paid by Hydro Chairman Robert H. Saunders

LOYALTY and devotion of eight members of the staff of the Woodstock Utilities Commission were acknowledged recently at a dinner inaugurating a 25-year club for the Commission.

C. W. Hayball, Chairman of the Woodstock P.U.C., presided at the banquet and welcomed staff members, their wives and friends, and out of town guests.

The eight men, each of whom has served 25 years or more with the Commission, are M. McCutcheon (40 years), H. Forden (30 years), P. Kennedy (30 years), J. R. Sullivan (30 years), N. McLeod (29 years), N. Copp (28 years), A. Wishart (27 years), and D. J. McGregor (25 years). Each was presented with a silver tea and coffee service, with matching tray specially engraved for the occasion.

In presenting the sets to four of the men, James Carnwath, a former Chairman of the Commission, paid tribute to their long and devoted service and expressed his pleasure that the club had been formed in recognition of their efforts. Presentation to the remaining four was made by W. F. Craig, Vice-Chairman of the P.U.C.

Hydro Chairman Robert H. Saunders, principal speaker, said he considered it a privilege to be present to honour the inaugural members of the 25-year club. In a way, he said, the banquet was an appreciation of the members of Commissions all over the province who had worked long and hard in serving the people of Ontario. "These eight men," he continued, "are representative of the men of Hydro who have built Ontario, for I consider electric power the greatest single factor in the development of the province. It is fitting, therefore, that we should pay tribute to these men who have made such an important contribution to the life of our province."

Other speakers at the dinner included R. M. Laurie, Manager, Western Region, and W. R. Strike, Second Vice-Chairman, H.E.P.C. Mr. Laurie expressed his pleasure at attending the inaugural dinner, which, he said, was a two-way compliment: first, to the men honored by the Commission, and second, to the Commission itself, that the men would consent to give so much of their life to its service.

Out of town guests included R. L. Hearn, Mr. and Mrs. W. R. Strike, Mr. and Mrs. A. W. Manby, Mr. and Mrs. M. J. McHenry, W. R. Mathieson, and T. E. Dietrich, all of Toronto; Mrs. R. M. Laurie, Mr. and Mrs. Adam Smith, of London; Mr. and Mrs. E. A. Washburn of Ingersoll.

SURPLUS AT TAVISTOCK

Official balance sheet and operating report of Tavistock Public Utilities, Hydro Department, for the year ending December 31, 1949, shows a net surplus on the year's operation of $1,664.64. The report also shows that the Commission had served 334 domestic consumers; 101 commercial consumers and 9 power consumers in Tavistock during the year.

REALLY "UP A POLE"

THERE'S one fur-bearing animal that doesn't have to worry about the possibility of swinging, in company with some of his companions, on somebody's back next winter.

Here's the sad story. A short interruption recently occurred on the 26,000-volt line feeding power to North Yonge Street from Fairbank to Sutton, and local phone circuits were apparently affected by the "outage".

The automatic reclosing feature of the oil circuit breaker made the interruption almost instantaneous, but a patrol was called to determine the cause. The crew tried to trace the phone and power faults to the same source, but it was found that a fault in the phone cable was created by the heavy surge of power.

Organizing a complete patrol the searchers worked their way to a pole carrying the switches to Pottageville at Yonge Street. Lying at the base of the pole was a racoon showing definite traces of his encounter with the 26,000-volt line — thereby not only disrupting power, but "short-circuiting" his possible trip to a furrier's table.

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GAS LIGHTS TO DISAPPEAR

Chicago is contemplating the replacement of the last of its gas and gasoline street lamps with electrical fixtures, according to a bulletin issued by the Federal Power Commission.

Ward E. Hanagin, City Superintendent of electricity, stated recently that his crews expected to begin shortly the job of removing the remaining 310 old-style lamps still in use in outlying sections of the city, and replacing them with modern electric lights.

Looking To The Future



R. H. SAUNDERS: "I can get along with this little cab for a year or two, but I'll need that big bus as business grows."

—THE TORONTO TELEGRAM—

Monthly Load Summary

MARCH, 1950

DEMAND for electric power continues at a high level throughout Ontario.

In Southern Ontario, according to the monthly load summary of The Hydro-Electric Power Commission for March, primary demand (actual load plus cuts) reached 1,946,879 kilowatts for a maximum 20-minute peak—an all-time record for that month and an increase of 7.2 percent over March, 1949. In the Thunder Bay System the figures were 160,300 kilowatts for March, 1950, compared with 131,924 kilowatts for the corresponding month of last year. This was an increase of 21.5 percent. Figures for the Thunder Bay System, however, include the demand from former customers of the Kaministiquia Power Company, whose system was purchased by the Commission in April, 1949. In the Northern Ontario Properties the demand increase last month over March, 1949, was 5.8 percent. Added significance is given to this increase by the fact that some restrictions in the use of electricity were still in effect during March, 1950, in this area while in March, 1949, there were no restrictions.

Total Generated And Purchased Power

Increases in total generated and purchased power are also reported by the Commission for March, 1950. In the Southern Ontario System the figures for March were 1,813,904 kilowatts compared with 1,724,449 kilowatts for March, 1949. This was an increase of 5.2 percent, principally due to the installation of emergency steam and diesel electric units by the Commission last winter. In the Thunder Bay System electric power production was up 15.1 percent over March, 1949, reflecting the additional generating facilities provided by the Kaministiquia Power Company's plant. In the Northern Ontario Properties the increase for March, 1950, over March, 1949, was 5.1 percent.

Tabulation:

PRIMARY DEMANDS
(Actual Loads Plus Cuts)

	Max. 20-minute Peak Kw.		Percent
	March, 1950	March, 1949	Increase
Southern Ontario System -----	1,946,879	1,816,884	+ 7.2
Thunder Bay System -----	160,300	131,924	+21.5
Northern Ontario Properties ---	222,739	210,506	+ 5.8
TOTAL GENERATED AND PURCHASED			
Southern Ontario System -----	1,813,904	1,724,449	+ 5.2
Thunder Bay System -----	170,100	147,724	+15.1
Northern Ontario Properties ---	225,929	214,871	+ 5.1



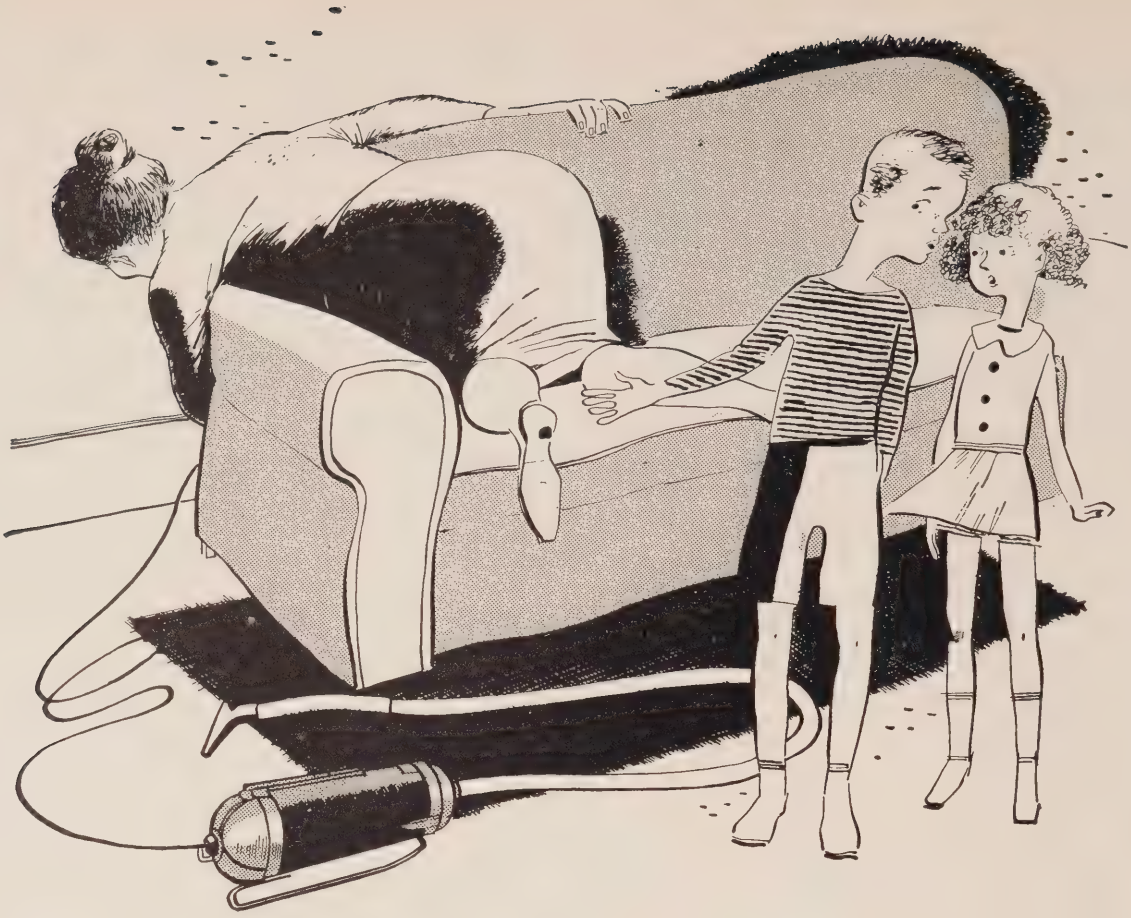
HYDRO News



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STEWARTVILLE

VOL. 37 JULY 1950 NUMBER 7



"She does that all the time . . ."

Exasperating, isn't it? . . . when you find yourself practically on your ear, or lamenting a new stocking run, just because you had to do gymnastics to plug in an electric appliance. That's what comes of having too few "convenience outlets", and those not even "convenient". The way to avoid all that, of course, is to insist on ADEQUATE ELECTRIC WIRING in your home.

All you need to know about that term, "Adequate Wiring", is that it means plenty of outlets in every room, served by enough different circuits, and includes sufficiently heavy wire to allow an electric range or water heater to work properly.

The simplest guide is the "RED SEAL" certification by the Electric Service League of Ontario, of which your Hydro is a member. When a home is adequately wired according to "RED SEAL" specifications, a red seal bearing the words, "STANDARD ELECTRIC HOME" will be placed on the main service switch box. If your home has that seal, you can be sure that it is wired to modern standards.

You need adequate wiring in your home. Obtain information on "Red Seal" wiring from your local Hydro or your local contractor.

If you are improving or building a home, ask your Hydro for the booklet "Adequate Wiring Today for Electrical Living Tomorrow."

"RED SEAL" ADEQUATE WIRING



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER PHOTOS

TAKING this month's front cover as a criterion, Hydro's Stewartville Generating Station, while not the largest of the Commission's plants, is certainly one of the most photogenic. Situated on the Madawaska River in Eastern Ontario, this station was placed in service in September 1948.

From the camera of Hydro Staff Photographer Robert F. Armstrong, the illustration on the back cover shows the Mississagi River looking downstream from the top of the main dam at the new Tunnel Generating Station which was officially opened on June 14 this year.

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July, 1950

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Cool Water

AN ALL-TIME RECORD

HYDRO'S vigorous resurgence following the relentlessly increasing demands upon its resources, during and since the war, was brought into sharp focus during the past month when power from three major post-war developments started surging into the Commission's expanding network to serve people in all parts of Ontario — in factories, homes and on the farms.

It was a month when, as it were, Hydro briefly eased the momentum of the record-breaking post-war program to officially chronicle a chapter of commanding and unparalleled achievement. The opening of three plants within two weeks certainly eclipses all previous records in Hydro's march of progress in Ontario.

Tunnel Development on the Mississagi River in the Algoma district, 18 miles from Thessalon and 76 miles east of Sault Ste. Marie, was opened on June 14 and started delivering its full capacity of 56,500 horsepower. Power from this plant is important in relation to the industrial growth of Northern Ontario.

Then Pine Portage Generating Station on the Nipigon River was placed in initial service on June 21 when one 40,000-horsepower generator started humming. Later this summer a second 40,000-horsepower unit will be in operation, representing a total capacity of 80,000 horsepower. At the same time, provision has been made for the addition of two additional units, as and when required, which will double the capacity of the plant. Pine Portage is the third Hydro development to be built on the Nipigon. It is approximately 12 miles above Cameron Falls plant and some 15 miles above the Alexander station. With the completion of Pine, Hydro engineers will have fully harnessed the waters of the Nipigon for the generation of electricity.

While both Tunnel and Pine Portage are vitally important projects, Des Joachims, which was placed in initial service on June 28, is Hydro's largest post-war development. Located on the Ottawa River, 38 miles upstream from Pembroke, Des Joachims, when completed early in 1951, will have an ultimate output of 480,000 horsepower and will rank second only to Hydro's Queenston station. Two of its eight units are now in service, providing an initial capacity of 120,000 horsepower.

Services totalling 216,500 horsepower were provided immediately — within a period of two weeks — by the opening of these three plants, benefiting consumers in both Southern and Northern Ontario. While this establishes an all-time record, still more records are in the offing. Before the end of this year an additional 280,000 horsepower will be made available — 240,000 horsepower from Des Joachims and 40,000 horsepower from Pine Portage. Before the end of January, 1951, a further 180,000 horsepower will be added — 120,000 from Des Joachims and 60,000 from Chenaux, located on the Ottawa River about 60 miles downstream from Des Joachims. This means that within a period of seven months 676,500 horsepower will be brought into service in Ontario — an unparalleled achievement in Hydro construction.

When speaking at the openings of the three new developments, Premier Leslie Frost of Ontario attributed the Commission's unparalleled achievement in being well ahead of schedule with the post-war program to "magnificent team-play and co-operation." Not only did he stress the untiring work of Hydro engineers and the personnel of the construction and other Commission departments, but he paid tribute to the important part played by labor on the various jobs.

In expressing similar sentiments, Hydro Chairman Robert H. Saunders recalled the difficulties encountered at the outset of the construction program in securing both materials and labor and expressed the warmest appreciation to the manufacturers of equipment and suppliers of materials in helping speed deliveries. He also voiced the thanks of the Commission to the Rayner Construction Company which carried out the construction of Tunnel development under the supervision of the Commission's engineers. There were words of appreciation also for the work of the Atlas Construction Company which had built the great McConnell Lake control dam at Des Joachims.

In commenting upon the exacting problems the Commission had had to face in recent years in relation to the power supply situation, Mr. Saunders said that the press and radio had rendered an outstanding public service in keeping the public informed about this situation and on the progress of the post-war program.

The Chairman also said a special "thank you" to the local Hydro municipalities, consumers, service clubs and other organizations who had all given heartening and effective co-operation in helping conserve power during the period of shortage in order that Ontario might maintain essential production at maximum capacity.

And having chronicled this important chapter in the progress of its record-breaking post-war program, Hydro now presses on to hasten the completion of the remaining plants now under construction — Chenaux and La Cave on the Ottawa River and the Richard L. Hearn and J. Clark Keith steam generating stations at Toronto and Windsor respectively. When the program is finally completed in 1952, a total of 1,600,000 horsepower will have been added to the Commission's resources — a vital and all-important contribution to the continued growth of Ontario and to the welfare and happiness of all who work and live within its boundaries.



PAUSING AFTER MORNING SESSION, this quintet waits for the luncheon bell. Group includes, left to right, Allan Bruce and Sherman Parr, of Brigden; Robert Butter, Owen Sound A.M.E.U. President; R. B. Chandler, Manager, Port Arthur P.U.C., O. H. Scott, Manager, Belleville, P.U.C.

Power Costs and Retail Rates

Increased Wages And Prices Along With Deferred Maintenance And Betterments Cited As Contributing Factors In Rate Increases — Conference at Bigwin Inn Attended By A.M E.U., Municipal Hydro And Commission Personnel

by
Boyd L. Graham
Hydro News

THERE should be no necessity for a further increase in the cost of power to consumers in municipalities where there have already been upward revisions in local rates following the increase in the wholesale cost of power announced last December 13.

This was the opinion expressed by Hydro Chairman Robert H. Saunders in announcing a further overall increase in the wholesale power rate of approximately five percent in the Southern Ontario System and possibly a slightly smaller increase in the Thunder Bay System effective January 1, 1951.

Mr. Saunders' announcement was a significant highlight of an address to members of the Association of Municipal Electrical Utilities, Commission representatives and other municipal Hydro officials during a conference at Bigwin Inn, Lake of Bays, Muskoka, June 9 and 10.

Mr. Saunders recalled that when the increase was announced last December he had stated that detailed studies would show that many urban and rural municipalities would be able to absorb the increase without raising rates to consumers. Events had shown that statement to be correct, he stated. In this connection, he pointed out that, to date, out of 312 cost municipalities, 139 had increased rates to consumers, two others had made application for the right to increase rates, while it was anticipated that seven additional municipalities would make application—altogether 148 out of 312.

"In other words," Mr. Saunders stated, "present indications point to the fact that in 164 municipalities rate increases to their consumers were and are not necessary as the result of the December 13 increase."

The speaker also stressed the fact that the further increase in the wholesale cost of power next January had been taken into consideration when approving applications from municipalities for the right to raise their local rates. For example, it had been made clear to Toronto and other municipal commissions that a further five percent increase would be necessary and the consumer increase already in effect in both urban and rural communities included the latest addition.

Frequency Standardization Cost

In discussing the question of 60-cycle areas paying a share of the cost of frequency standardization, Mr. Saunders pointed out that the 60-cycle municipalities were only paying on the basis of 50 percent of the total cost of standardizing the frequency throughout Southern Ontario.

"If we look at the facts, we find that the 60-cycle areas received tremendous advantages following amalgamation of the resources of the southern part of the

province in 1944," he stated. Frequency standardization was simply a further step in the amalgamation program, he pointed out and declared, "I think it is only fair that the 60-cycle areas should help to pay for some of the advantages they received and will never wholly pay back."

J. Clark Keith

Theme of the conference, which was attended by over 250 municipal Hydro and Commission personnel, was "Power Costs and Retail Rates." The two-day sessions were in charge of A.M.E.U. President Robert Butter, assisted by J. Clark Keith, Windsor, Past President and Chairman of the Rates Committee and W. R. Mathieson, A.M.E.U. Secretary.

During a brief address at the outset of the sessions, Mr. Keith struck the keynote of the meeting and set the stage for the comprehensive discussions which were to follow.

"When we consider what The Hydro-Electric Power Commission has done in the field of electrical generation and distribution," the speaker remarked, "minor changes in policy now vaguely remembered are completely overshadowed by the success of its major function to supply the province with a cheap and adequate supply of power."

Pointing to the fact that the basis of charging for power had remained almost the same for the past 40 years, Mr. Keith dealt briefly with the policy in effect respecting tranmission charges. In this connection, he mentioned that there would soon be "a provincial network of transmission lines which will deliver power to all points from almost any source."

"It would seem that the time has come when consideration might be given to a revision of the traditional policy involving transmission distance," he stated.

Concluding, Mr. Keith declared, "when these sessions are adjourned, it is reasonably certain that many questions will have been answered. We will either have been convinced that the present basis is as equitable as possible or we will know what changes are contemplated together with some indication of the trend of future rate structures."

R. L. Hearn

Giving delegates a general picture of Hydro at the present, Richard L. Hearn, Hydro's General Manager and Chief Engineer, stated that the Commission's present energy demand was approximately 18,000,000 kilowatt-hours greater than this time last year.

This growth in demand reflected the fact that, according to statistics, the population of Ontario was increasing by 10,000 a month, Mr. Hearn pointed out. "In other words we are being asked to supply power to a new city of 10,000 every 30 days," he stated.

Referring to load growth on all systems, the General Manager stated that loads had increased by approximately 652,000 kilowatts between the years 1945



"GIVE ME MY BADGE, PLEASE!" C. E. Crease, H.E.P.C., Barrie, tells Ray Pfaff, St. Catharines, during registration proceedings at this year's A.M.E.U. Conference. Among those registering are A. W. Taber, Ft. William; G. L. Lillie, Toronto Hydro; G. Baldwin, Aurora, C. L. McMann, Sarnia.

CLAD FOR COMFORT and seemingly eager to get down to work, these delegates were caught by the photographer returning to another session during the conference. This group includes G. F. Davis, K. C. Coleman, F. A. Archer, H. T. Macdonald, H.E.P.C. and R. Martindale, Sudbury.





KEEN INTEREST IN CHARTS used by D. E. Charters, Windsor, left, who discussed domestic rates, is manifested by this group: C. E. Hodgson, London; C. Leach, Chatham; F. A. Murphy, Toronto; C. E. Kirkby, Stamford Twp.; John Dawson, Dunville, and E. A. Hodgson, Ridgetown.

and 1949, or an average slightly in excess of 130,000 kilowatts each year.

"It is well to appreciate what it means to be required to supply new generation at the rate of 130,000 kilowatts each and every year," he continued.

For instance, construction of the Stewartville plant was undertaken in 1945 and the station was officially opened in September, 1948, with a total capacity of 60,000 kilowatts (81,000 hp).

"In other words," Mr. Hearn declared, "the plant was three years in building and the power was used up in six months."

Need Larger Sites

This pointed up the necessity of developing sites with a larger capacity, the speaker asserted, "for, if it was necessary to take care of an annual increase in load of 130,000 kilowatts by means of hydro-electric developments the size of Stewartville, it would be necessary to have at least six plants under construction at all times."

Turning to Hydro's postwar construction program, the speaker recalled that in 1939, Hydro's total capacity was 1,150,000 kilowatts (1,533,330 hp). "By 1952 when La Cave is completed, our total capacity will be 2,493,220 kilowatts (3,324,292 hp) including emergency steam and diesel plants," he stated.

In the same vein, he pointed out that between 1946, when the present program first got underway, and 1952, when it is scheduled for completion, the Commission's capacity will have been more than doubled.

Concluding, he stated, "I am convinced that the building of power stations is one of the soundest investments any country can make."

Trends In Power Costs

Discussing trends in power costs in 1950-1951, E. H. Banks, Commission Comptroller, disclosed that the average cost per horsepower in the Southern Ontario System this year would be approximately $24.86 as compared with $20.82 in 1947, while in the Thunder Bay System this year's cost had been estimated at $24.06 compared with $18.49 in 1947. Continuing, Mr. Banks stated that a study of trends had showed an estimate of $26.11 average cost for Souther Ontario in 1951 while the average cost in the Thunder Bay System would be $25.26 next year.

Reminding his listeners of the warning issued to municipalities in December last year that "the new interim rates are much more closely related to actual cost than formerly" and that "refunds should not be anticipated," the speaker stated that individual refunds would be substantially eliminated by 1951.

Dealing with the necessity for rate increases, Mr. Banks pointed out that increased wages and prices affecting operating costs as well as deferred maintenance and betterments were contributing factors.

"For example, wage rates increased approximately 64 percent between 1939 and 1949, while such materials as iron and non-ferrous metals, copper, brass and their products increased by 83 to 90 percent during the same period," he said.

Considering that fixed charges represented 76 percent of the cost of power, the impact of high prices and wages was fully appreciated when it was also realized that between 1939 and 1950, the cost of construction index rose 100 percent while the Commission's investment in Southern Ontario, built during the period of sharpest rise would be 154 percent greater in 1952 than it was in 1945. The investment in the Thunder Bay System would be 244 percent greater by 1952, the speaker also stated.

Concluding, Mr. Banks stated: "From studying these cost factors together with anticipated load and planned generation, we conclude that power costs have not yet levelled off."

"But," he added, "where new retail rates have been approved by the Ontario Commission, we think the operating surpluses thereby provided will cover any increase over the 1950 costs."

Determination Of Power Costs

Speaking on "Determination of Power Costs," K.C. Coleman, Commission Cost Accountant, pointed out that the Commission determined the cost of producing and delivering power or energy to each municipality on an individual basis. Cost allocation had become more complicated during the past few years as Hydro acquired and built additional generating sources, extended its lines and absorbed



THIS YEAR'S CONFERENCE of A.M.E.U. and municipal Hydro representatives dealt comprehensively with the subject of power costs and retail rates.

small systems in the Georgian Bay and Eastern Ontario areas, he said.

As a result, in 1943, generated and purchased power, various frequency changers and inter-connecting facilities of the Niagara, Eastern Ontario and Georgian Bay systems were amalgamated and allocated to all loads in the Southern Ontario System. The Commission also requested its financial advisors, Clarkson, Gordon and Company to conduct a study of the problem of distributing costs more equitably and simplifying the costing process.

Testing of the proposals of the financial firm submitted last year was scheduled for completion this fall, Mr. Coleman said.

At the present time, the speaker continued, the cost of power to municipalities was broken down into various elements including: Cost of purchased power, operating, maintenance and administrative expenses, interest, etc.

Under the new policy, if adopted, cost of power would be based on functions: Power supply, including step-up; bulk transmission; high tension step-down; low tension distribution; distribution stations; division costs; direct charges; provision for special contingencies; provision for rate stabilization; provision for maintaining a limitation of the cost of power; provision for frequency standardization; and company surplus or deficit.

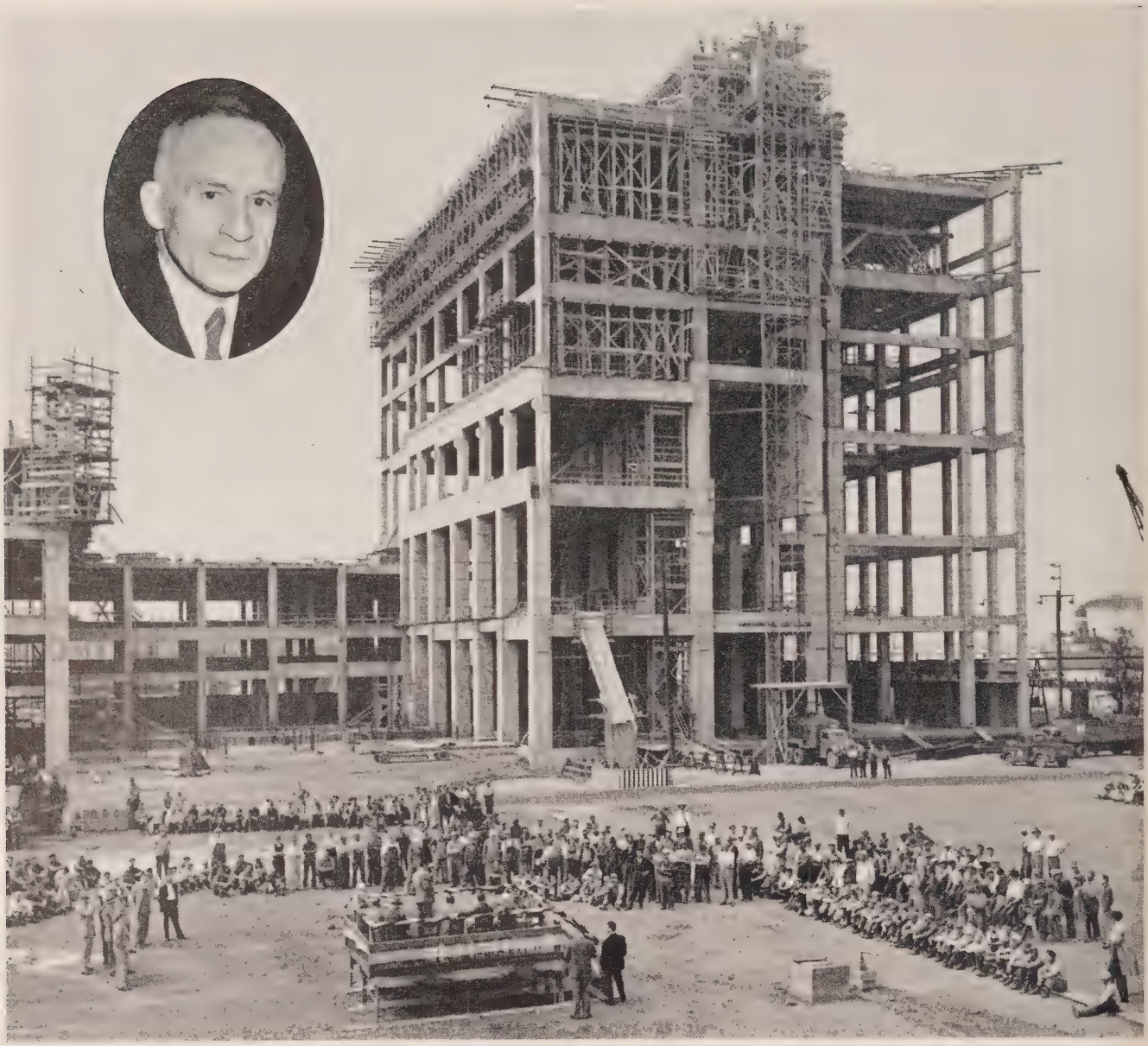
During his address, Mr. Coleman gave a brief description of each of these functions.

"It is against the background of the present method and the proposals of our

(Continued on page 15)



NO HEATED DISCUSSION HERE! S. R. Walkinshaw, Manager, North Bay Hydro-Electric Commission, Art. Taber, Manager, Fort William Hydro-Electric Commission, and O. W. Harris, Secretary-Treasurer of North Bay Commission, chose this spot overlooking lake for intermission chat.



LAST CONCRETE POUR at J. Clark Keith Steam Station occasion for official ceremony. Station named for Windsor Commission Manager (inset).

Name Windsor Station

Steam Generating Project Officially Designated In Honor Of Windsor General Manager — Brief Ceremony Marks Last Pour Of Concrete

EVEN aside from his loyal and devoted service to the Windsor Utilities Commission and to the Association of Municipal Electric Utilities, the name of J. Clark Keith will go down in Hydro history.

In a brief ceremony on May 30 marking the last pour of concrete for the Commission's 120,000 kilowatt (160,000 hp) steam generating station in Windsor, Hydro Chairman Robert H. Saunders announced that the station would henceforth be known as the "J. Clark Keith Generating Station, Windsor."

The man for whom the station has been named has held the position of General Manager of the Windsor Utilities Commission since 1935, becoming Manager of its Hydro Division in October of 1941. He was Chief Engineer of the Essex Border Utilities Commission from 1921 to 1935, when it merged with the Windsor Commission. He has been active in the A.M.E.U. for many years, holding the President's chair in 1949.

Born in Smiths Falls, Ontario, Mr. Keith is a graduate in civil engineering of the University of Toronto, Past President of the Ontario Council of Professional Engineers, of the Canadian Section, American Waterworks Association, and of the Ontario Hospital Association.

During his address, Mr. Saunders pointed out that an indication of the continuous work going on was to be found in the fact that while the ceremony in connection with the last pour of concrete was in progress, steam hoisting equipment for the erection of the new steam generators was being moved into the new structure.



SIXTY-CYCLE POWER was made available to consumers in London, when Mayor George Wenige flicked a switch in the home of R. W. D. Lewis, Commissioner of London P.U.C. In front row, left to right— Mayor Wenige, R. H. Saunders, Chairman, H.E.P.C., Mrs. Lewis, R. W. D. Lewis, Elmo Curtis, Chairman, London P.U.C., Verne McKillop, Assistant General Manager, London P.U.C. Rear row, left to right—Ross Strike, Second Vice-Chairman H.E.P.C., H. H. Leeming, Director of Frequency Standardization A. W. Manby, Assistant General Manager — Administration, H.E.P.C., Charles C. Rathgeb, President Canadian Comstock Co., and R. L. Hearn, General Manager and Chief Engineer, H.E.P.C.

Forty Years Later

London Marks First Cut-Over To 60-Cycle Power

by

C. G. W. MacIntosh
Hydro News



ACTUAL CHANGE-OVER of a refrigerator in a consumer's home is watched by Chairman Saunders and Mayor Wenige. Mechanics W. E. McVittie and F. Webster (right) are from Canadian Comstock Co., the Commission's contractors.

ON June 1 this year, almost 40 years after the first 25-cycle power was transmitted to London by Ontario Hydro, that city chronicled another and important epoch in its history.

The flick of a switch in the home of R. W. D. Lewis, K.C., a member of the London Public Utilities Commission sent 60-cycle power surging into the homes of 107 domestic consumers and a commercial consumer's establishment. It marked the official start of Hydro's frequency standardization program in London that will result in 27,000 consumers of all classes having their electrical equipment changed over for operation on the new frequency by March 1951.

As on that day in November 1910, when Sir Adam Beck, Chairman of Ontario Hydro, the Mayor of London and other dignitaries were present for the important ceremony of receiving the first 25-cycle power, the June 1st observance this year was attended by the present Hydro Chairman, Robert H. Saunders, members of the Commission, leading Hydro officials and engineers, the Mayor of London, and Public Utilities officials. This time, however, electric power was not a new service to Londoners, for indeed London has one of the highest



CLOCK AND FAN DEPOT established by Hydro so that consumers may bring in their 25-cycle items for change-over to the new frequency, or have them exchanged for new 60-cycle equipment. When Hydro moves its standardization activities to rural areas it sets up mobile depots.

"CHOPPER" FREQUENCY CHANGER set is inspected by (left to right) Elmo Curtis, Chairman, London P.U.C., M. E. Shook, Superintendent, Canadian Comstock Co., H. H. Leeming, Director of Hydro's Frequency Standardization Div., and W. Roy Harmer, Consumer Service Engineer, F.S.D.



power consumption records per capita in the province.

But it did usher in an important era—when Londoners for the first time enjoyed the benefits of 60-cycle power, now being adopted more or less universally on this continent and considered by leading engineers as the more efficient frequency.

Tremendous Job

Keynote of the brief ceremony, that marked the commencement of 60-cycle power supply for London, was struck by Hydro Chairman Saunders. Referring to London as the "home of Sir Adam Beck where he fought his battles to promote Hydro," Mr. Saunders said:

"We must all realize the tremendous job done by Sir Adam in making sure that low-cost hydro was available in Ontario. Sir Adam had been criticized for being a dreamer. He visualized the day when by pulling a switch, residents of Ontario would boil water, cook and do other things that were amazing then. It has long been shown that Sir Adam was no dreamer."

Mayor George Wenige, a member of the London Public Utilities Commission, who, at the invitation of Chairman Saunders pressed the switch that launched the frequency standardization program, observed that Sir Adam's dreams actually were "reality in an embryonic state."

"Sir Adam," he revealed, "dreamed of a light on every pole. That dream is also becoming a reality under an agreement with the London P.U.C."

Later, at a luncheon and reception given by the London Public Utilities

Commission, following a brief tour of the first cut-over area and some points of civic interest. Chairman Elmo Curtis of the P.U.C., epitomized the reactions of London officials. Said Chairman Curtis: "This is a day that we in London have looked forward to for some time."

Edward V. Buchanan, General Manager of the London Public Utilities Commission, and dean of Hydro engineers, maintained that the switch to 60-cycle power was indeed an epoch. He revealed that 40 years ago on November 30, 1910, he was present at the original ceremony when Mayor J. H. A. Beattie and Sir Adam Beck pressed the switches to bring the first 25-cycle power to London.

"I feel that 60-cycle power will mean a lot to industry. We will make a success of it in London," he said.

Now Or Never

The Hydro Chairman maintained that it was not the fault of Sir Adam Beck that 60-cycle was not available in Southern Ontario now. In those days, he pointed out, 25-cycle was the popular frequency. First 16-2/3 cycle was considered, then 33-cycle, and finally a compromise was made for 25-cycle.

It was now or never that Hydro had to change to 60-cycle. The Commission was placing three new plants in operation (in June), Tunnel, Pine Portage and Des Joachims—all 60-cycle. Then, there were four others to follow, La Cave, Chenaux, and the J. Clark Keith and Richard L. Hearn Steam Generating Stations at Windsor and Toronto respectively. The Commission had had to make a decision, and it was agreed that now was the time to standardize the frequency at 60-cycle. The matter was put to the O.M.E.A. and they had concurred. So Hydro was going ahead with the big frequency standardization program in Southern Ontario.

The Chairman said that the surveys and inventories in conjunction with this program had revealed the marvellous standard of living in the province. Ontario had the highest per capita use of electrical equipment and the highest per capita consumption of electric power to be found anywhere. The per capita use of electricity in the U.S. was 1,600 kilowatthours, in Canada as a whole it was 3,300 kilowatthours, and in the province of Ontario is was 3,600 kilowatthours.

In London, he continued, where 15,300 consumers already had been inventoried, it had been found that 83 percent of the people had electric refrigerators. "A tremendous amount of electric power is being used in this 'cradle of Hydro'—where Hydro actually had its origin," Chairman Saunders declared.

Charles C. Rathgeb, President of the Canadian Comstock Company, Hydro's contractors who are handling the frequency standardization program in London, predicted that changing over to 60 cycle will bring many advantages to the

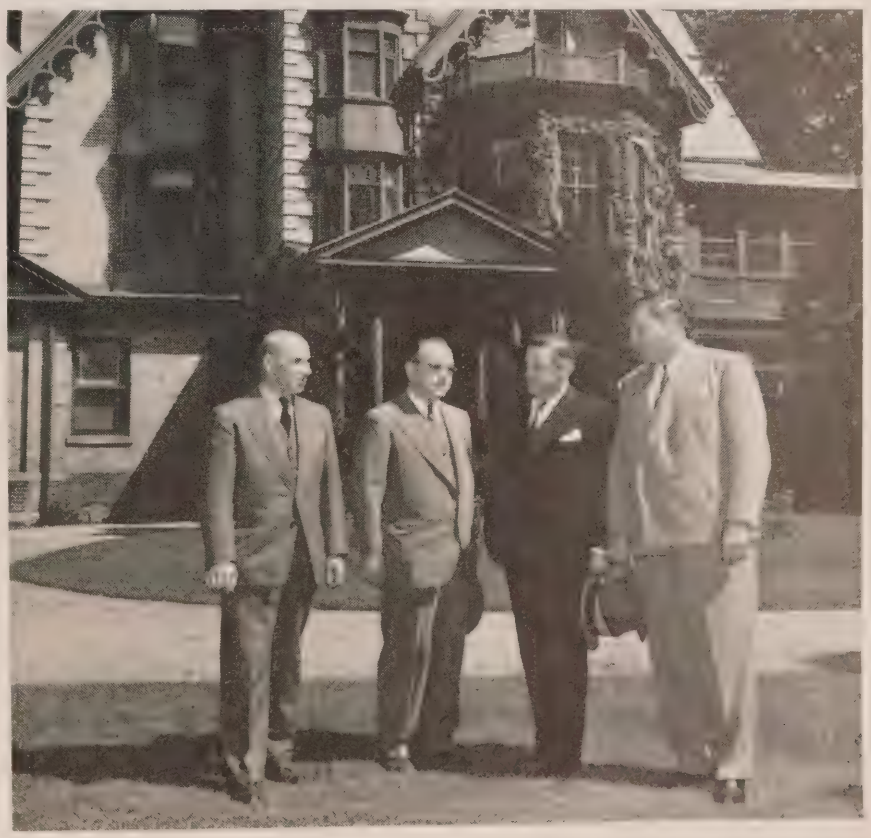
(Continued on page 17)



LOOKING OVER washing machines in the shops of Canadian Comstock Co. Left to right, H. H. Leeming, Elmo Curtis, Roy Harmer, R. W. D. Lewis and Chairman Saunders.

★ ★ ★

INCLUDED IN the inaugural ceremony program was a visit to "Headley," home of the late Sir Adam Beck. L. to R., H. H. Leeming, Elmo Curtis, Chairman Saunders and Charles S. Rathgeb.



A Ribbon is Cut



by
Edith B. Kent
Hydro News

Fine New Home of Public Utilities Commission At West Lorne is Opened by Chairman Saunders

IN the bright spring sunshine, a red satin ribbon gleamed brightly, then fell apart at the touch of sharp scissors. And with a turn of a key the new home of the West Lorne Public Utilities Commission was open for business.

Chief actor in this symbolic scene was the man behind the scissors, Hydro Chairman Robert H. Saunders. Officially opening the new office, Mr. Saunders congratulated the village of West Lorne on its "highly efficient Hydro staff and magnificent new building." After a dedicatory prayer by Rev. W. K. Morrison, the building was declared open to the public.

Official ceremonies included a dinner in the Community Hall, the actual cutting of the ribbon, and a public meeting in the Royal Theatre, presided over by A. G. Stonehouse, Chairman of West Lorne P.U.C. Speakers included W. T. Merrett, Reeve of West Lorne; R. M. Laurie, Manager, West Central Region; E. D. McMillan, M.P.P. for Kent East; J. R. Milner, West Lorne Commissioner; K. G. Phoenix, who is West Lorne Secretary and Superintendent and also Manager of West Lorne Rural Operating Area.

Addressing the theatre audience, Mr. Saunders reviewed the progress of Hydro from its inception in 1906 to its present vast expansion program. "No less than 383 different projects are under way at the present time," he stated, "from small switching stations to the mighty Des Joachims development. And all of these are aimed at the protection of the people of Ontario."

"This wonderful institution," continued the Chairman, "has grown from about 10 municipalities at the outset to more than 1,000. Of that number approximately 310 of them are cost municipalities. Hydro is an outstanding example of public ownership brought into being through the efforts of private enterprise.

Describing the expansion program, the speaker asked, "What does this mean to you of West Lorne? Just this: that Hydro's long-range plan for connecting the power networks of Ontario with those of adjacent provinces and with parts of the United States will result in a great power pool wherein any community, regardless of size and location, will have as much power available as any other community."

In his comments on the opening of three major Hydro developments in June, Mr. Saunders advised the community to "go ahead and get new industries—after June 28 (opening date of the 480,000 horsepower Des Joachims station), we can supply them!"

Modern Brick Building

The new West Lorne P.U.C. building is a one-storey, brick structure of modern design, housing the spacious general office with its wide plate-glass windows, the superintendent's office, a laboratory and testing room, supply room, and large garage where three trucks are kept. The building is radiant-heated by a system installed in the floor, fluorescent-lighted, and decorated in a pleasing combination of white and buff. On opening day, several baskets of multi-colored snapdragons added a festive note to the occasion.

Besides Mr. Phoenix, the staff consists of Mrs. P. Cummings and Miss Marjorie Walker, clerks; G. King, foreman; G. Page, sub-foreman; D. Nichol, stockkeeper; and eight linemen.

These 14 people serve the Hydro needs of 373 consumers—283 domestic, 77 commercial, and 13 power—with a total load of 156,000 kilowatthours. This represents a considerable increase from the 75 original Hydro consumers. The staff also operates the West Lorne Waterworks, which serves 360 local water consumers, and supplies water to the municipalities of Dutton and Rodney and to the New York Central Railroad water pans at West Lorne. In addition, opera-

tion of the West Lorne Rural Operating Area is carried out by this staff.

Before joining the Hydro family, the village was served, electrically speaking, by the West Lorne Electric Light and Power Company. Organized about 1900, this company supplied electricity from a boiler at the flour mill of A. McKillop & Sons until the mill was destroyed by fire, then from the McKillop sawmill. Later the company built a small power station, which sufficed for some years until a contract was signed with Hydro in September, 1916. Power was first turned on late in December of the same year. First Chairman of the Hydro system was Fred J. Cullen, while H. Robinson was Superintendent.

On March 19, 1947, the West Lorne Hydro joined with the local water system to form the Public Utilities Commission. Archibald McKillop was appointed Chairman; Bruce Sheeler, Commissioner; Dougald Carmichael, Reeve; and John Cardwell, Secretary.

Present Commission consists of A. G Stonehouse, Chairman; J. R. Milner, Commissioner; W. T. Merrett, Reeve; and K. G. Phoenix, Secretary.

In contrast to the increase in number of consumers and amount of power used, the cost of power in West Lorne has been substantially reduced since 1917. The first power bill, issued January 31, 1917, was for 21.4 horsepower at $55.60 per horsepower, or approximately 15.96 kilowatts at $74.53 per kilowatt. Present cost is $43.50 per kilowatt for a total of 543.8 kilowatts.

Named For Marquis

In the early 1860's, a number of men from the neighboring districts of Oakville and Trafalgar became aware of the lumbering possibilities of the country around what is now West Lorne, in Elgin County about 25 miles west of St. Thomas. These men were the first settlers of the village. Originally called Bismarck, with a Post Office address of West Lorne, it was incorporated as a village about 1907, and received its present name in honor of Queen Victoria's popular son-in-law, the Marquis of Lorne, later a Governor-General of Canada.

Reflecting the influence of the surrounding timberlands, the first industries of the community consisted largely of sawmills, stave factories, and planing mills. Even now, more than a half-century later, wood forms the basis of most of West Lorne's industries.

Probably the oldest of these is Milner Turned Goods, owned and operated by J. R. Milner, P.U.C. Commissioner.

The Erie Flooring & Wood Products Limited, with about 125 employees, is the largest industry in the village. This flourishing company owns a sawmill in Harcourt, near Haliburton, and operates



SCISSORS FLASHING in the sun, Hydro Chairman Robert H. Saunders is about to cut symbolic ribbon to open new building. Watching him are Mrs. P. Cummings, K. G. Phoenix, M. Walker.



ON THE OUTSIDE looking in. Intently watched by West Lorne Chairman, A. G. Stonehouse and Secretary Ken Phoenix, Mr. Saunders inserts key in front door. Gold letters are shown reversed.



ON THE INSIDE looking out. View through new office's wide front windows shows the main street. Children were much interested in the opening, attended public meeting afterwards.



HYDRO TRUCK, one of West Lorne's three, forms background for smiling linesmen. Left to right, they are G. King, foreman; B. Newman, B. Stalker, D. Branchflower, P. Willits, W. Britton, D. Campbell, J. Bell, A. Humphreys, D. Nichol, stockkeeper; G. Page, sub-foreman.



BEHIND COUNTER in new building's modern general office are Mrs. P. Cummings, left, and Marjorie Walker. West Lorne P.U.C. has 14 on staff, serves a total of 373 Hydro consumers.

a wholesale and distribution yard in Toronto. Its subsidiary company, the West Lorne Lumber Co., Limited, operates a sawmill in West Lorne, and another subsidiary company, The American Sawmill Products Limited, started a promising business in Montreal.

One of the newer—in fact, probably the newest—of West Lorne's industries is the factory of the Medcalf Shoe Company, Limited. A branch of the main plant in St. Thomas, it manufactures ladies footwear. At the time of Hydro News' visit, hundreds of nurses' shoes and sport shoes were in various stages of production.

These and other enterprises, the inviting homes and the friendly people combine to impress upon the visitor the fact that West Lorne is a happy and thriving community which is on the march with Hydro to new and greater achievements in the years ahead.



RICH TIMBERLAND in vicinity provides raw material for several industries. Here 40-hp saw turns out 3/8-inch flooring planks.



NEWEST INDUSTRY in community is shoe factory. Operator of side laster nails uppers to soles, while plant superintendent inspects.

POWER COSTS

(Continued from page 7)

financial advisors that we are considering the resolution of the O.M.E.A. passed at their annual meeting this year requesting the Commission to consider a flat rate throughout the province," the speaker stated.

Energy Factor In Cost

Turning to the energy factor in cost, Mr. Coleman pointed out that the Commission was considering this factor as it applied to the determination of the cost of power.

In summing up, Mr. Coleman presented the following conclusions:

(a) The effect of energy in cost can be valued and probably should be valued;

(b) Customers of the Commission should probably pay for energy in proportion to the amount used.

"Taking all the complicated factors into account, at the present time it would appear that in allocating the cost of generation and related facilities, somewhere between 25 and 50 percent of such costs should be charged out on the basis of energy," he stated.

The actual value to be assigned over any period of time would depend upon the interaction of such complex factors as system load factor averages, the relative amount of energy contributed by the thermal plants and the cost thereof, and the quantities of energy available for sale or which must be purchased to meet system requirements.

History of Rate Structure

In presenting a brief but comprehensive history of the present rate structure, R. T. Jeffery, Commission Consultant on Municipal Affairs declared that "from 1912 to 1950, the Commission has always tried to co-operate with the municipalities and has consulted the A.M.E.U. Rates Committee before instituting any changes." Mr. Jeffery's outline of events leading up to the formation of the present rate structure was of immeasurable value to delegates in their discussions on this complex subject.

Future Rate Structures

In dealing with the subject of present and future rate structures, M. J. McHenry, Director of the Consumer Service Division, told his audience that "consideration is being given to the various factors that have an apparent effect on retail rates."

Mr. McHenry in his address, dealt with factors relating to costs and methods of wholesale billing. In addition, he discussed those factors relating to the use of energy and conditions of load. Launching into his subject, he pointed out that the selection of the most adaptable and effective rate structure could be made only after a complete study of conditions. Such a study, he said, was now underway but would require some time to complete.

"It is hoped that it will be possible to establish a position of Rate Engineer on the Commission's staff," the speaker stated. "This position will permit a continuous and detailed study being carried on in respect to all retail rates and will result in changes being developed from time to time to adequately meet changing conditions."

The Commission's rate studies, both now and in the future, would include a detailed examination of rate structures and trends of other utilities, in the United States as well as in Canada, and a comparison of such rate structures with Hydro rates and conditions.

"This will assist us in maintaining an adequate knowledge of the current thinking and planning of the utility industry as a whole and should benefit Hydro materially," Mr. McHenry added.

Pointing to the complexity of the problem of rate structures and quantities, the speaker stated that it was the desire of the Commission that all the factors involved should be fully studied and discussed with the A.M.E.U. from time to time before adoption of changes affecting municipal rates.

In concluding, he declared that any study of rate structures must necessarily anticipate a substantial growth in load, particularly domestic, as the result of new methods of house heating which were being more widely-used each year.

Hailing the present meeting as "an indication of the mutual desire to consider these vital problems," Mr. McHenry declared that the continuance of these studies and discussions should provide an adequate background for the adoption of such rate changes as might be necessary in the future.

Effect of Frequency Standardization

Considerable interest was manifested in the address of George Richardson, of Clarkson, Gordon and Company who dealt with the important subject: "Effect of Frequency Standardization on the Cost of Power."

As auditors of the Commission, Mr. Richardson stated that his firm had been asked to recommend ways and means of financing the frequency program.

In 1948, the sum of $7,447,000 was included in the cost of power as a provision toward the cost of frequency standardization while $6,393,000 was included for 1949, making a total of $13,840,000, it was pointed out.

"These amounts were equivalent to $3.30 per horsepower in 1948 and $2.76 per horsepower in 1949, on all municipal, company and rural loads in the Southern Ontario System," Mr. Richardson said.

In summing up, the speaker told his audience that the costs of frequency standardization had been included in the cost of power to date to the extent of some $13,800,000 provided for in 1948 and 1949, equal to an average of $3.03 per horsepower on the loads in these years. Continuing, he stated that the 1948 provision had affected costs only indirectly with the result that there was no appreciable change in the average cost of power charged to municipalities. In this connection, he pointed out that the 1948 provision merely took the place of special contingency provisions which had been made in previous years. On the other hand, the 1949 provision, because of higher operating expenses and fixed charges, was possible only with an increase in costs chargeable to the municipalities.

Discuss Changes In Rates

Climaxing this important conference were four important papers predicated on the question: "Are Changes Desirable in Rate Structures?" Participating in this discussion were D. E. Charters, Windsor, who discussed domestic rates; J. W. Hammond, Hamilton, Commercial; J. E. Teckoe, Jr., Galt, Power, and W. J. Wylie, Toronto H.E.S., Miscellaneous.

In his paper on domestic rates, Mr. Charters suggested a service charge based on demand as a means of discouraging the waste of electricity in homes.

Discussing commercial rates, Mr. Hammond suggested the possibility of combining domestic and commercial loads on a common rate. While this would mean a loss in commercial revenue, this reduction could be made up by increasing the follow-on rate for domestic or commercial by .05 cents per kilowatthour.

"This common rate basis, if adopted, would free capital now tied up in demand meters, eliminate the cost of load inspection, where a connected load basis of billing is in force, and simplify the billing procedure with a resulting saving in costs," the speaker declared.

During the sessions, greetings were extended to the delegates from the O.M.E.A. by President D. P. Cliff, Dundas, while the welcome to Muskoka was delivered by George F. Hutcheson, Chairman of Huntsville P.U.C. and Secretary of the O.M.E.A.

H. N. FOX DIES

HARDY N. FOX, Chairman of the Harrow Hydro-Electric Commission, died suddenly on June 4 at the age of 71.

Mr. Fox had been a member of the Harrow Hydro-Electric Commission since its inauguration 20 years ago, and for 10 years he held the office of Chairman. Born in the Township of Colchester South, he farmed in that locality until retiring to Harrow 25 years ago.

He is survived by his widow and a daughter, Mrs. Frances Quick of California.



TORONTO HYDRO'S Accident Prevention Committee Dinner, held recently in the Bristol Room of the Canadian Legion in Toronto. Attending the dinner were foremen and sub-foremen of the Toronto Hydro-Electric System who heard E. E. Sparrow, Chairman of the Workmen's Compensation Board, in an address on "selling" safety to their men. Mr. Sparrow paid tribute to the Toronto System for its prevention program.

Selling Safety

E. E. Sparrow, Workmen's Compensation Board Chairman, Tells Toronto Hydro Group 180,000 Accidents Reported Per Year



GUEST SPEAKER E. E. Sparrow with members of the Committee. Left to right, back row, E. M. Ashworth, Chief Engineer & General Manager, Toronto Hydro; B. Merson, Vice-Chairman, Toronto Electric Commissioners; E. E. Sparrow, Chairman, Workmen's Compensation Board, Wills Maclachlan of H.E.P.C., Consultant, and D. G. Moffitt, Assistant Executive and Secretary of the Committee. Front (left) C. E. Schwenger, Assistant Chief Engineer, Toronto Hydro, and Chairman of the Committee; H. A. Russell, Asst. Station Construction Engineer, Toronto Hydro.

STRESSING the importance of "selling accident prevention" to their men, E. E. Sparrow, Chairman of the Workmen's Compensation Board addressing some 85 foremen and sub-foremen at a recent dinner held by the Accident Prevention Committee of the Toronto Hydro-Electric System, said he was "delighted to learn that Toronto Hydro gave complete support to the cause of accident prevention."

Pointing out that there were approximately 180,000 accidents reported each year to the Board, Mr. Sparrow divided management in the province into three "types" with regard to accident prevention:—(a) the management which introduced a scheme and had a continued interest in it; (b) management which initiated a scheme and relinquished all interest in it, and (c) management which took no interest whatsoever—a state of affairs which, according to the speaker, led to the loss of fingers, arms, legs, eyes and even lives.

Emphasizing the necessity for prompt and accurate reporting of accidents so that immediate action could be taken, Mr. Sparrow also stressed the importance of getting injured workers directly to hospital, thus creating another type of prevention by minimizing the possibility of injuries becoming even more serious.

Lauding the efforts of Dr. J. H. Couch, Toronto Hydro, for the part he had played and was playing in the System's accident prevention program, the speaker said that the benefits of first aid were,

(Continued on page 19)

FORTY YEARS LATER

(Continued from page 11)

southern part of this province. He maintained that many U.S. factories would locate in Southern Ontario, as a result of the change-over.

The initial cut-over in London went smoothly and efficiently. Along Queen's, Elizabeth and Dufferin Streets, frequency standardization technicians rolled up in the familiar red trucks, to the homes in the first "cut" area. They carried in motors and parts necessary for the change-over in the 107 domestic consumers' homes, proceeding with the task in a pre-arranged, systematic pattern like a well-drilled army. Housewives stood in doorways watching with great interest as the technicians brought in the materials and set about in an efficient manner to change over frequency sensitive equipment for operation on 60-cycle power.

Hydro Chairman Saunders chatted with one domestic consumer, Mrs. H. G. Murray, 624 Queen's Avenue, and asked her if she was satisfied with the work done. Obviously pleased, and especially with the lighting difference, she replied: "Yes, and there is no more flickering."

Special Engineering Study

Change-over in London will require some special engineering study in certain sections. London has an underground network in the downtown area where a high load system extends five blocks east and west and four blocks north and south. Approximately 15 percent of the total power load of the city is compressed into less than one percent of the whole area of the municipality.

Because it is a high load density area and all inter-connected, the district can't be split up in the ordinary sense, but will be done in five sections. Frequency changer sets will have to be used during the change-over of this area.

Another interesting feature is the fact that London will have three new sub-stations when it is changed over to 60-cycle power supply. The city's load has grown to the point where more capacity and efficient distribution are needed, and London P.U.C. wants less load concentrated in any one sub-station. The opportunity will be taken, while the city is being changed over, to construct the new sub-stations which will be on 60-cycle. The residential load then will be supplied by nine sub-stations in all and three additions to the system will take part of the load of existing stations. This will mean that stations now carrying approximately 6,000 kilowatts will in future carry only about 4,000 kilowatts.

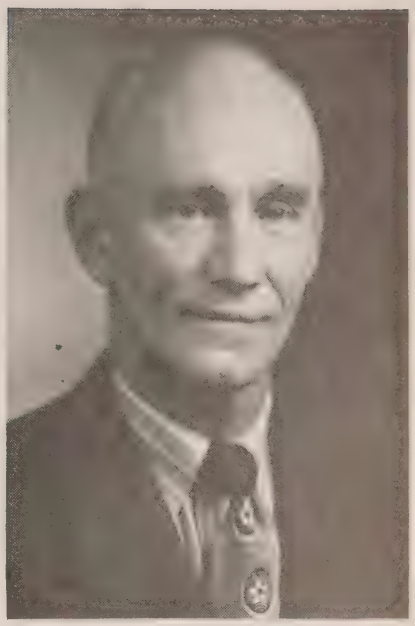
Underground Water Supply

London's water supply is from deep underground springs obtained through 38 wells. No. 1 pumping station, at Horton and Ridout Streets, the city's first pumping station, became a casualty of the disastrous flood of 1937, when the Thames River went on the rampage and flowed over a large area of the city. Sub-station No. 1 with its horizontal pumps was also put out of commission by the flood waters. So London P.U.C. will take this opportunity, when the switch is being made to 60-cycle power supply, to replace the horizontal pumps with vertical pumps and the motors will be above flood level.

So London, the "capital" of Western Ontario, hometown of the late Sir Adam Beck, "Father of Hydro," and first major city in Southern Ontario to experience the benefits of the Commission's frequency standardization program, presents some interesting engineering problems for those directing the change-over program.



G. A. HONSBERGER



A. E. HALSEY

NEW COMMISSION APPOINTMENTS

APPOINTMENT of G. A. Honsberger to the position of Chief Accountant of The Hydro-Electric Power Commission of Ontario was announced recently by Chairman Robert H. Saunders.

The appointment became effective June 1, when Mr. Honsberger, Assistant Chief Accountant for the past two years, succeeded J. E. Pile, who retired on that date after 35 years of service with the Commission.

Born in Toronto on March 13, 1893, Mr. Honsberger joined the Commission January 1, 1914, in the Accounts Payable department. Since that time, he has held various important positions with Hydro, including that of accountant at the Queenston development and superintendent of stores. He was also on a special committee whose efforts resulted in the installation of modern accounting machines in Hydro offices.

The position of Assistant Chief Accountant vacated by Mr. Honsberger is being filled by A. E. Halsey, formerly Property Accounting Supervisor. F. D. Parnell, Accountant, Eastern Region, Ottawa, has been named to succeed Mr. Halsey.

Special Edition

MARKING a series of events regarded as unparalleled in 44 years of Hydro history, *Hydro News* will chronicle the official opening of the Commission's three new power developments — Tunnel, Pine Portage and Des Joachims — in the August issue of this magazine. In recording the ceremonies attending the bringing into service of these new power developments during the epoch-making month of June, the Editor and staff of this publication hope to pay fitting tribute to those who were associated with the planning and construction of these important projects which will play a vital role in the security and prosperity of the people of Ontario.



Fort William Hydro To Purchase System

FORT William Hydro-Electric Commission has been authorized by Hydro to purchase the distribution system formerly owned and operated by the Kaministiquia Power Company within the corporate limits of the Lakehead city. The system forms part of the properties of the Kaministiquia Company acquired by the H.E.P.C. last year.

Referring to this announcement, Chairman Robert H. Saunders stated recently it had been previously agreed that the Fort William Commission would take over the local Kaministiquia distribution system as of November 1, 1949, and that the price agreed upon was $430,000. Assent, he said, had now been given by the Commission to a proposal that the City of Fort William provide the funds for the local commission by means of a $440,000 twenty-year debenture issue to take care of the purchase price and interest.

The capital assets of the Fort William Hydro-Electric Commission are reported to exceed $1,191,000.

NEW STREET LIGHTING APPROVED FOR HAVELOCK

Havelock is to have new street lighting and improvements are to be made on the local power distribution. The Commission recently approved the necessary expenditure of $49,000 from available funds of the Havelock Hydro-Electric Commission. Approval has also been given for an issue of debentures amounting to $30,000 to cover part of the expenditure.

HYDRO APPROVES GRIMSBY REQUEST

An expenditure of $1,500 from available funds of the Grimsby Hydro-Electric Commission to effect street lighting improvements has been approved by Hydro. The Grimsby Commission has sought approval of that amount to modernize its street lighting system on Main Street from the easterly limits to Robinson Street and from Livingston Avenue to Kerman.

JOHN MILNER



BORN and educated in the village in which he serves as a Public Utilities Commissioner, John Milner of West Lorne, is owner and manager of Milner Turned Goods, Limited, and formerly held the same positions with Milner Plumbing and Heating Company, now taken over by another company. He first joined the West Lorne Commission in 1939 as Waterworks Superintendent, and was elected to his present position in January of 1949.

Mr. Milner is actively interested in municipal affairs, and holds a high office in the Masonic Order. He is also President of the West Lorne and Aldborough Red Cross, and member of the Chamber of Commerce, the Horticulture Society, and the Athletic Association.

BANKS COLLECT HYDRO BILLS

Windsor banks last year collected 71,638 Hydro bills, which is approximately one third of the total bills issued during the year. The amount collected was $391,858.45. Banks making such collections are paid a fee of five cents per bill by the Windsor Utilities Commission.

STOUFFVILLE'S REQUESTS ARE APPROVED BY HYDRO

Hydro has approved a request from the Village of Stouffville to expend $12,168.82 from available funds to cover the cost of extending their distribution system and for frequency standardization. The Commission has also approved Stouffville's request for Hydro's assistance in carrying out the work in connection with frequency standardization, any costs incurred to be charged to the Corporation.

AWARD CONTRACT FOR HEAD GATES

Award of a contract to Dominion Bridge Company, Ltd., Toronto, for fabrication of 16 head gates to be installed at Hydro's La Cave Development on the Ottawa River at a total cost of some $257,000 was announced recently.

The headgates will be an integral part of the headworks control structure to be incorporated in the main dam and will be used to shut off the flow of water to the turbines to permit maintenance work on generating units in the powerhouse.

SARNIA CHAIRMAN DIES

George N. Galloway, Chairman of the Sarnia Hydro-Electric Commission, this year, died recently at the age of 73.



G. N. Galloway

Mr. Galloway took an active part in municipal affairs having been a member of the Sarnia Hydro-Electric Commission since 1925. The deceased was also a member of city council and served as mayor for one year. He was also associated with the Parks Board for 25 years.

Born and raised in Bothwell he came to Sarnia as a railway engineer and served in that capacity for 42 years. He is survived by his widow, two daughters, Carmen and Florence; and one brother and two sisters.

REEVE OF WEST LORNE



WILLIAM MERRETT

WILLIAM MERRETT, Reeve of West Lorne and a member of the village's Public Utilities Commission, has a long record of public service.

The active part he has taken in municipal affairs dates from 1916, when he was first elected Councillor for the village. He served intermittently in this capacity until 1944, when he was elected Reeve, a position which he also held in 1945, 1946, and 1949.

Born in London, England, Mr. Merrett emigrated to Canada some years ago. He is married, has two daughters, and enjoys working in the garden and hunting deer (he emphasizes the spelling).

PENSION AGREEMENTS WITH 5 HYDRO BODIES

Authority has been granted by the Commission for execution of agreements which will make employees of five Hydro municipalities eligible for the benefits of the Municipal Hydro-Electric Pension and Insurance Plan.

In making this announcement, Hydro Chairman Robert H. Saunders stated that the municipal authorities involved are Hanover Public Utilities Commission, Milton Hydro-Electric Commission, Oakville Public Utilities Commission, Petrolia Public Utilities Commission and Walkerton Hydro-Electric Commission. Mr. Saunders also said that application would be made for the necessary approval of the agreements by the Lieutenant-Governor in Council.

A good boss is one who makes his men think they have more ability than they have, so they consistently do better work than they thought they could.

ACCIDENT PREVENTION

(Continued from page 16)

to a great extent, being overlooked. Pointing out that organizations were taking full advantage of the improvements in modern tools and machinery, Mr. Sparrow queried: "Why not take the same advantage with regard to modern medicine and surgery?" If, the speaker contended, even the smallest wound was treated at once with one of the many antiseptics available today, there would be a considerable reduction in the amount of infection cases reported.

That familiarity breeds contempt was not, according to the speaker, a statement that could be taken lightly. Mentioning some typical accidents reported to his board which were caused by this over-confidence, Mr. Sparrow told his audience of a parallel which showed how effective accident prevention could be if properly carried out.

In this respect he told of a recent visit to the U.S. Atomic Energy Commission, where it was revealed to him, that out of a total of approximately 1,000,000 man years worked at this dangerous job, their accident record amounted to two dead and seven injured as a result of contact with radioactive material.

Calling the attention of his audience to the fact that "warning" men was not enough, and that they should go out and "sell" them on accident prevention, the speaker said there were two kinds of accidents—avoidable and unavoidable.

"In respect to the latter," the speaker said, "this is merely a statement, as an unavoidable accident is just one which we have not yet learned to avoid."

A BUSY MAN



KEN PHOENIX

COMBINING the duties of Area Manager for West Lorne R.O.A. with those of Superintendent of West Lorne Public Utilities Commission keeps Ken Phoenix a busy man.

Joining the Commission in 1928 as a groundman in the Operating Department, he later became a lineman, retaining that position until his appointment in 1945 to the P.U.C. He was appointed to his present post in May, 1948.

Married, and the father of three children, Mr. Phoenix is President of the West Lorne Community Athletic Association, and a member of the Chamber of Commerce and the Horticulture Society.

A. G. STONEHOUSE

NOW in his third year as Chairman of the West Lorne Public Utilities Comsion, A. G. Stonehouse has been in the Hydro service in that community since 1947, when he was elected a Commissioner.

He is manager of Canadian Canners in West Lorne, and has held various important positions with that company in Aylmer, Exeter, and Forest, his birth place.

Married, and the father of five children, Mr. Stonehouse takes a keen interest in many of the village's activities. He is a member of the Chamber of Commerce and of the Masons, President of the West Lorne 5-pin bowling league, and on the Board of Managers of the municipal Athletic Association. He is also manager of the West Lorne Baseball Club, and himself enjoys many sports, including hunting, fishing, bowling, and baseball.



A. G. STONEHOUSE





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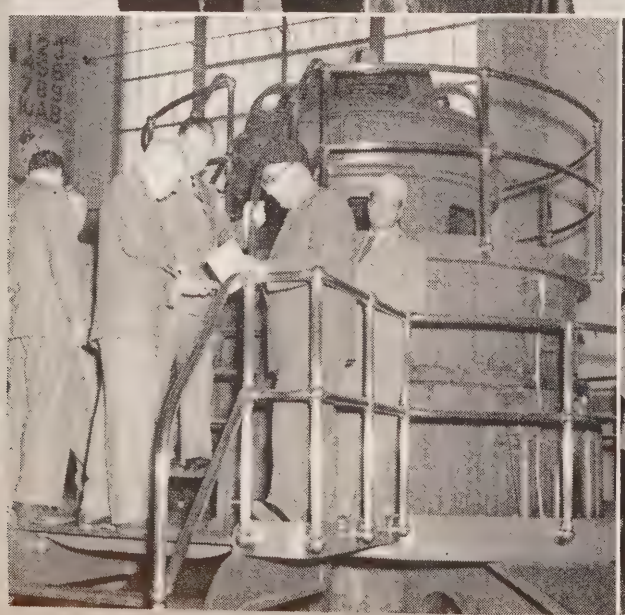
Visitors From Pakistan

ANOTHER illustrious name was entered in the Visitors' Book at Hydro's Queenston plant on June 3 when Prime Minister Liaquat Ali Khan of Pakistan **(top)** took up the pen and signed. Watching are Hon. Charles Daley, Ontario Minister of Labor **(left)**, Hydro Chairman Robert H. Saunders and Rosanne Richardson, Chief Guide at Queenston.

After making a tour of the Commission's largest plant, the Prime Minister and members of the visiting party took a trip on the famous "Maid of the Mist" at Niagara Falls. The photographer got this picture of the Begum and her distinguished husband sitting with Chairman Saunders on board the boat.

The two pictures below show the party in the Queenston plant. **Left:** on one of the large generators and **(right)** R. L. Hearn, Hydro's General Manager and Chief Engineer, pointing out features of a turbine runner. Included in the official party were: Hon. Mohammed Ali, High Commissioner for Pakistan in Canada; M. Ikramullah, Secretary, Ministry of Foreign Affairs and Commonwealth Relations; Hon. Hugues Lapointe, M.P., Solicitor General of Canada, and Howard Measures, Chief of Protocol, Canadian Department of External Affairs.

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HONOR RETIRING CHIEF ACCOUNTANT



Left to right: J. Dibblee, Manager of Personnel; J. E. Pile, G. A. Honsberger, who succeeds Mr. Pile and E. H. Banks, Comptroller.

RETIRING after 35 years' service with the Commission, J. E. Pile, Chief Accountant, was recently honored by his associates, when he was presented with a walnut desk with chair and fittings, and a gold watch.

Making the presentation, E. H. Banks, Comptroller, said Mr. Pile had, through the years, contributed extensively to the efficiency of the Accounting Department.

Playing an important part in its organization, Mr. Pile watched his department grow from a handful of people to its present staff of 363.

An active member of the Working Committee, Mr. Pile was also presented with a billfold and "keytainer" at a luncheon held in his honor by members of the Committee.

LAUDS HYDRO'S ROLE

NOTING "fond recollections" of his association with Hydro, before and during World War 1, F. F. Espenschied, District Representative for the American Filter Co. Inc., in Washington D.C., in a recent letter to the Commission lauded the part Hydro has played in the progress of the province, and also drew attention to the part it had played in cultivating friendship between the United States and Canada.

Mr. Espenschied's letter reads, in part: "I was a municipal engineer with Hydro in charge of the Northern territory before and during the first World War, when Sir Adam Beck was in his glory. I still have most fond recollections of my association with Hydro, with Sir Adam personally, his engineer Mr. Sothmann, and later Fred Gaby, and the municipal and engineering staffs of Hydro. Since that time your enterprise has grown and served Ontario well, as I hoped and believed it would, thus fulfilling the fond dreams of that remarkable and outstanding Canadian, Sir Adam."

Regarding the Hydro's role in furthering friendship between the two countries, Mr. Espenschied points to a recent article in "Hydro News" which he described as "a very timely and thoughtful article regarding means for cultivating the friendship of Americans." Speaking of his own experience in Canada, Mr. Espenschied sums up—"even after the lapse of many years I recall the fine character and hospitality of the people of Ontario with deep appreciation."

WINDSOR ACHIEVEMENT

Collection of 99.98 per cent of all Hydro accounts due the Windsor Utilities Commission was the record achieved last year, General Manager J. Clark Keith reported recently. The sum of $343.33 was written off as uncollectible on last year's accounts which totalled $2,613,416.

Monthly Load Summary

APRIL, 1950

PRIMARY power demands throughout Ontario continue at a high level, The Hydro-Electric Power Commission of Ontario reports in its load summary for April, 1950.

In Southern Ontario, primary demands (actual loads plus cuts) reached a maximum of 1,959,521 kilowatts during 20-minute peak periods—a new record for that month and an increase of 7 percent over April, 1949 when the peak of 1,831,924 kilowatts was attained.

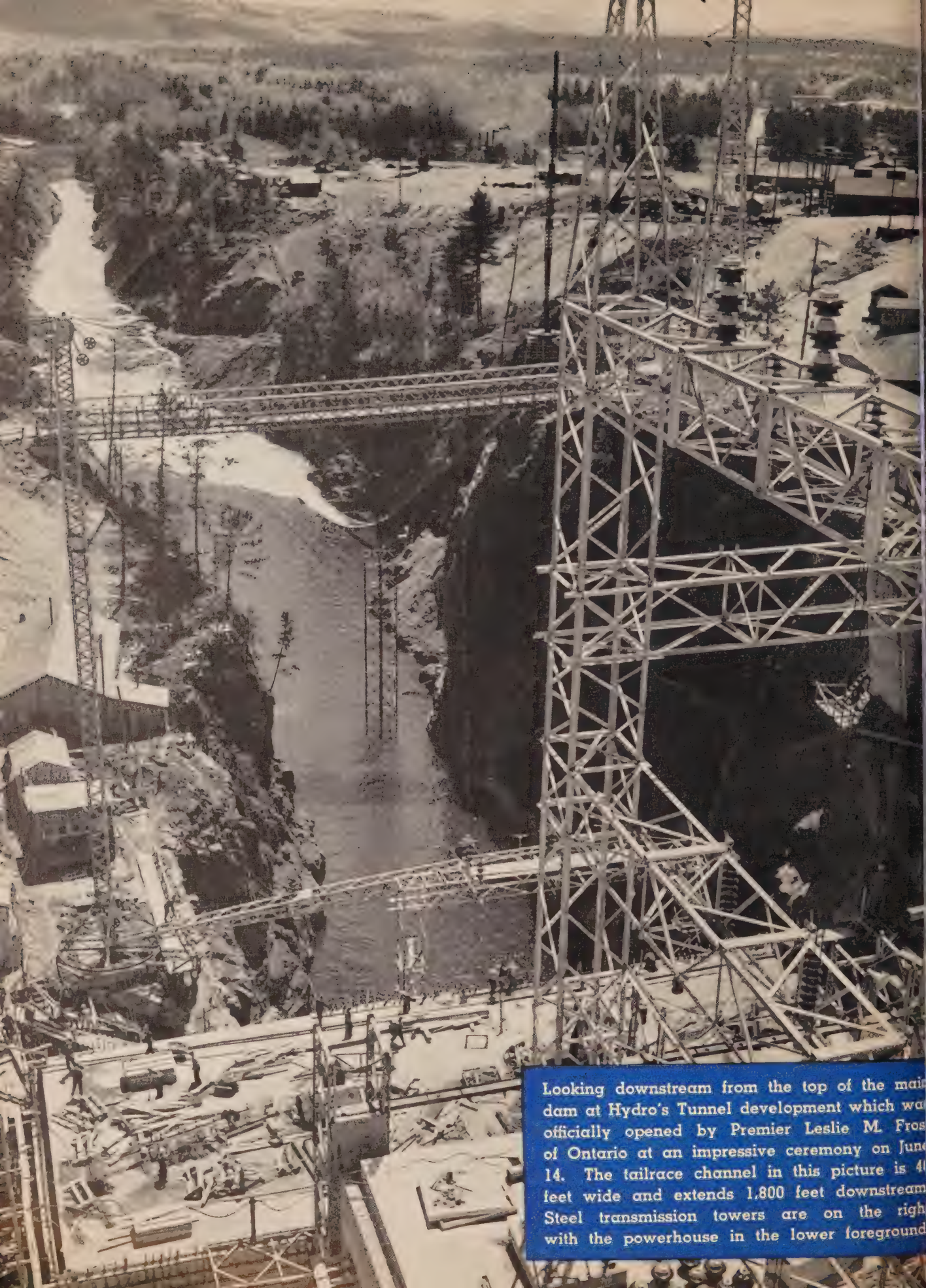
A primary demand of 161,890 kilowatts was recorded in the Commission's Thunder Bay System during April this year, compared with 155,717 kilowatts in April, 1949—an increase of 4 percent. In previous reports an abnormal increase in load has been indicated in comparing monthly loads of the Thunder Bay System with those of the previous year. This has been due to the fact that figures indicated in reports for the past 12 months have included power demands of former customers of the Kaministiquia Power Company whose system was purchased by the Commission effective April 1, 1949. A full year has now elapsed since the Kaministiquia Power Company was purchased by the Commission and absorbed into the Thunder Bay System. Therefore, the abnormal increase in primary demands as well as total generated and purchased power is no longer indicated.

In the Northern Ontario Properties, the demand increase in April this year was 6.6 percent over the same month last year. Figures for April, 1950, indicate a primary peak demand of 213,236 kilowatts as compared with 200,015 kilowatts during April, 1949.

The Commission also reports increases in total generated and purchased power during April this year. An increase of 8 percent is indicated in the figures for the Southern Ontario System which show a total of 1,860,396 kilowatts generated and purchased during April, 1950 compared with 1,723,284 kilowatts during the same month last year. Peak power output was up 3.2 percent in the Thunder Bay System over April, 1949, while, in the Northern Ontario Properties the increase over last year was 0.5 percent.

The tabulation in kilowatts for the three systems is as follows:

	Max. 20-minute Peak Kw.		Percent
	April, 1950	April, 1949	Increase
PRIMARY DEMANDS (Actual Loads Plus Cuts)			
Southern Ontario System	1,959,521	1,831,924	+ 7.0
Thunder Bay System	161,890	155,717	+ 4.0
Northern Ontario Properties	213,236	200,015	+ 6.6
TOTAL GENERATED AND PURCHASED			
Southern Ontario System	1,860,396	1,723,284	+ 8.0
Thunder Bay System	171,190	165,817	+ 3.2
Northern Ontario Properties	248,566	247,230	+ 0.5



Looking downstream from the top of the main dam at Hydro's Tunnel development which was officially opened by Premier Leslie M. Frost of Ontario at an impressive ceremony on June 14. The tailrace channel in this picture is 40 feet wide and extends 1,800 feet downstream. Steel transmission towers are on the right with the powerhouse in the lower foreground.

HYDRO News



VOL. 37 AUGUST 1950 NUMBER 8

"MASSIVE DEEDS ..."

Tunnel, Pine Portage and Des Joachims Developments Placed in Service with Initial Output of 216,500 H.P. Hailed as Impressive Monuments to Commission's Staff

by
The Editor

"All are architects of Fate;
Working in these walls of Time;
Some with massive deeds and great,
Some with ornaments of rhyme."

WHEN Henry Wadsworth Longfellow penned these words to "The Builders," he might have been paying tribute to all whose planning, direction and labors over the past few years now find enduring and commanding expression in Hydro's Tunnel, Pine Portage and Des Joachims developments, officially opened in that order on June 14, 21, and 28 to provide an immediate, combined delivery of 216,500 horsepower and an ultimate, combined output of 616,500 horsepower within the next six months when the additional generating units are in operation at Des Joachims and Pine Portage.

Comprising three of the eleven projects included in the Commission's tremendous $592 million postwar program which, by 1952, will have added 1,600,000 horsepower to Ontario's power resources, they are truly representative of "massive deeds and great." They stand as impressive monuments to high achievement in the annals of Canadian engineering and construction skill, and at the same time, reflect the smooth-working organization and team-play back of Hydro's accelerated effort which has hastened delivery of a substantial block of power ahead of schedule.

All coming within two weeks, these three official openings established a record unparalleled in 44 years of Hydro history. At each opening one was conscious of an absence of any suggestion of the kind of formality or stiffness sometimes associated with opening ceremonies.

At Tunnel, Pine Portage and Des Joachims, the same scene was enacted. Right up to the night before the opening, Hydro folks were bustling around, within the powerhouse, just to make sure that everything was spic and span and in readiness for the "big day." They hung flags, pinned up bunting and placed large murals which graphically portrayed the progress of the entire postwar program. While the neatly-roped, improvised platform was receiving a transforming coat of paint, radio technicians hustled from point to point testing wiring, microphones and public address systems.

Like Sleeping Giants

To the visitor who had arrived early, it was an interesting experience to see these pre-opening activities. Indeed, it was interesting to just stand and look over one of these modern powerhouses, particularly Des Joachims.

Rising from the depths of the smooth, concrete floor of the powerhouse, the completed generating units, massive, modern and glistening, stood like sleeping giants ready to spring to life when the switch was pressed. High above, like a winged steel monster, a powerhouse crane was humming along great rails built into the rugged walls. At Des Joachims there are two of these cranes, each with a capacity of 170 tons; at Pine there is one with a capacity of 180 tons and at Tunnel there is also one whose capacity is 100 tons.

Opening day was a proud, happy event for all concerned — at Tunnel, Pine and Des Joachims — and at each a great crowd was on hand. These were significant gatherings. There were the men of Hydro, representative of the wide diversity of professions and craftsmanship that go into the building of a power plant. Those who had the good fortune to be off duty, donned white shirts and flannels or even their "Sunday best." Quite a few had the wife and kiddies along to see what daddy had done. Then there were the contingents of visitors who arrived by train, bus and automobile — visitors representing a great cross-section of Ontario industry, public life, press and radio.

Overall Common Denominator

While each occasion had a very vital and intimate significance of its own, the three openings together had one overall common denominator that found expression in the illuminated words "More Power For All Ontario" which flashed on as generating units at each of the developments were set in motion.

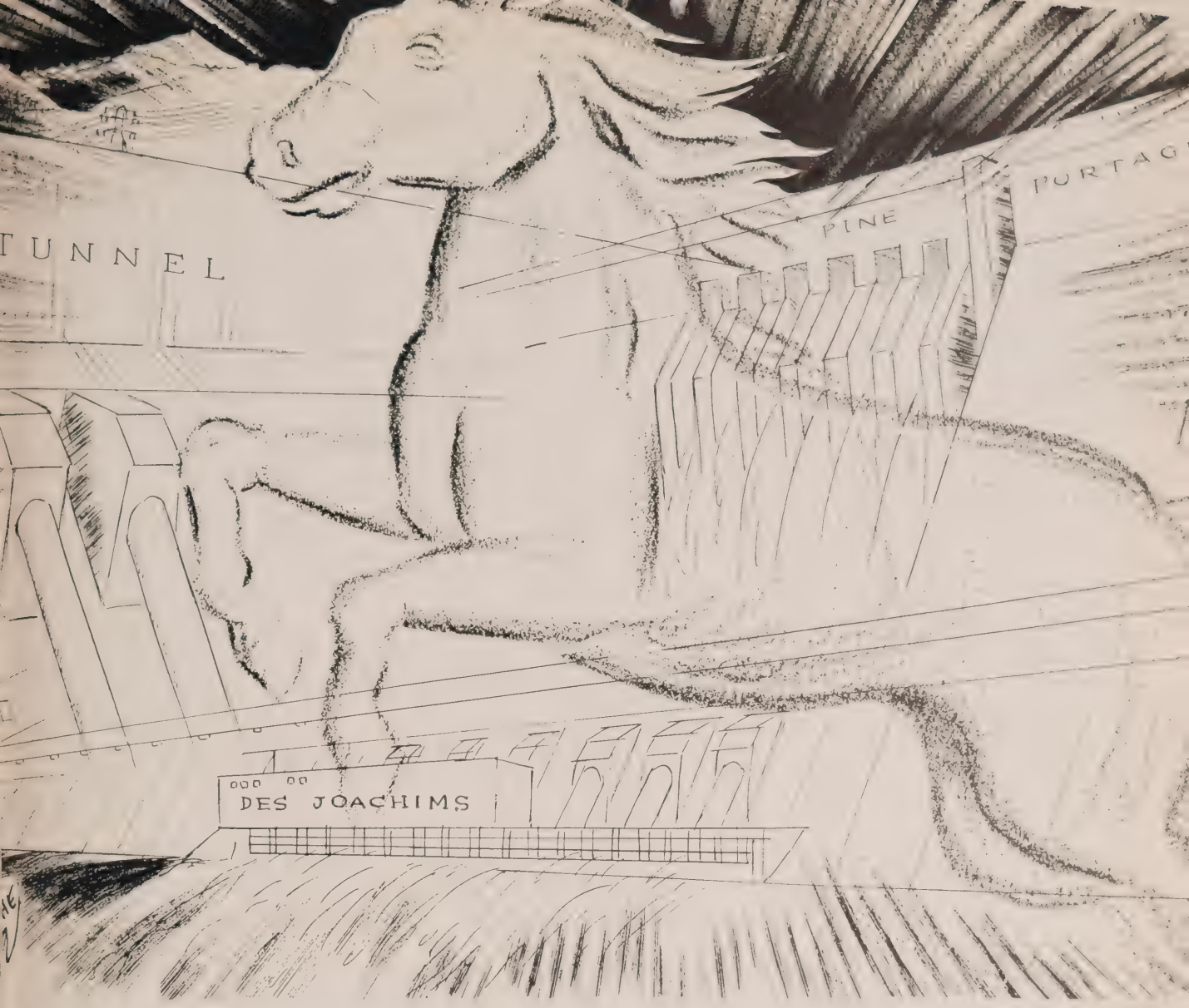
If any members of the great Hydro family at Tunnel, Pine or Des Joachims had any doubts as to whether they had done a fine job, these doubts were quickly dispelled during the opening ceremonies by Premier Leslie Frost, Hydro Chairman "Bob" Saunders, General Manager and Chief Engineer R. L. Hearn and other speakers. The tributes voiced were not just so many platitudes and words. While speaking in their official capacities as men entrusted with high and heavy responsibilities, they were also speaking as fellow Canadians who were proud to have a part in these historic events. Their words had a heart-warming, man-to-man ring of sincerity as they said, in effect "thank you, one and all, for a job well done." The acknowledgment of these tributes at each event was equally heart-warming and spontaneous.

It was obvious that Premier Frost, Chairman Saunders, First Vice-Chairman George H. Challies, M.L.A., Second Vice-Chairman W. R. Strike, K.C., and others attending the openings had more than just a passing interest in these men whose lives and skills are interwoven with the creation of tremendous projects. The Premier, himself, was asking many questions and became engrossed in deep conversation with many veteran Hydro employees.

Camaraderie In Evidence

The spirit of camaraderie and exhilaration in evidence on every hand was accentuated by the fact that blue skies

Hydro's Achievements Lauded During Official Opening Ceremonies



and bright sunshine attended all three official openings. Something of that spirit was captured by the cameras of movie and press photographers while vivid, descriptive pictures were conveyed to great listening audiences by broadcasts direct from the actual openings.

Tunnel Ceremony

At Tunnel, Premier Frost called upon James Boyd to press the switch and thus start 56,500 horsepower on its way to the people of Northwestern Ontario. Mr. Boyd is a master mechanic and blacksmith who has been thirty years on the staff of the Rayner Construction Company, whose personnel under the direction of the Commission's engineers, constructed the Tunnel Development on the Mississagi River.

At Pine Portage, the Premier enlisted the aid of David Lee, veteran Hydro employee, to press the switch and start up the first 40,000-horsepower generator. Mr. Lee, carpenter foreman at Pine, has been engaged on various Commission construction jobs since 1915.

And then, at Des Joachims, Premier Frost suggested that the Hydro Chairman himself, should have the honor of pressing the button which set in motion the first two generating units of Hydro's largest post-war development.

One could readily sense that it was a proud moment for "Bob" Saunders whose dynamic personality seems to have imparted an added impetus to the whole postwar program. And while the Chairman may have become known for a down-to-earth approach in meeting day-to-day problems, he did betray his very human side when, on discovering that he had overlooked a man whom he had meant to introduce and thank, he exclaimed: "Folks, you really must excuse me, but I'm so excited today."

But Mr. Saunders did not overlook many people. And he addressed himself to them in a manner which carried emphasis and sincerity. At Tunnel, he had words of thanks and appreciation for George Rayner of the Rayner Construction Company which built that development under the direction of Hydro engineers. "On behalf of Hydro," said Mr. Saunders, "I say thank you to you, Mr. George Rayner, for a wonderful job well done . . . To Mr. George Price, your superintendent, and to our own superintendent, Mr. Bill Reynolds."

When speaking at Des Joachims, he took the opportunity of directing attention to another fine job which had been done by an outside construction company — the building of McConnell Lake dam by the Atlas Construction Company.

The Chairman also paid warm tribute to the work of his colleagues on the Commission, Hon. George H. Challies and W. Ross Strike, K.C., to R.L. Hearn, the Commission's General Manager and Chief Engineer, to Dr. Otto

(Continued on page 11)



EXECUTIVE AND MANAGEMENT of the H.E.P.C. are shown in top photo. In centre is Chairman Robert H. Saunders; others are, L to R., R. L. Hearn, General Manager and Chief Engineer; E. B. Easson, Secretary; W. R. Strike, 2nd Vice-Chairman; Hon. G. H. Challies, 1st Vice-Chairman; Dr. O. Holden, Assistant General Manager—Engineering; A. W. Manby, Assistant General Manager—Administration. IN LOWER PHOTO are senior H.E.P.C. officials responsible for engineering and construction of new stations. L to R., G. E. Kewin, Electrical Engineer; G. Mitchell, Generation Construction Engineer; E. T. Ireson, Generation Engineer; J. R. Montague, Director of Engineering; S. W. B. Black, Senior Project Engineer; J. M. Hambley, Director of Operations; H. W. Beck, Director of Supply; D. Forgan, Director of Construction. Inset: G. F. Simson, Electrical Engineer

Holden and A. W. Manby, Assistant General Managers, Engineering and Administration respectively.

In his remarks, he included such key men as Jack Montague, Director of Engineering; David Forgan, Director of Construction, W. P. Dobson, Director of Research; H. W. Beck, Director of Supply, and many others.

"Front Line Workers"

At each of the openings, the Hydro Chairman said a very special thank you to the "front line workers" — to the men who carried out the plans and built the developments. The co-operation of labor, he said, had been "truly magnificent."

He remembered the fine work of Bill Reynolds at Tunnel, of Hal Johnson, Resident Engineer, and Lou Gallagher, Construction Superintendent, at Pine Portage, and of Bill Hogg, Resident Engineer, and Angus Richardson, Construction Superintendent at Des Joachims.

"And," said Mr. Saunders, "I am not forgetting the assistance that was given Hydro by the manufacturers and suppliers of equipment and material. By speeding up deliveries, they helped to shorten the time taken in bringing the three power developments into service."

The Hydro Chairman had words of warm praise for the Press and Radio. "They have," he declared, "rendered a great public service in giving information to the people of Ontario on the progress of the developments and in assisting the Commission in keeping the people informed on the power supply situation during periods of shortage."

Then he turned to Premier Frost. "You, sir, and your government, have helped us in every way possible. You have supported Hydro in all its work —

(Continued on page 13)



PINE PORTAGE Generating Station as it will appear when completed. The first unit is in service in June, second will follow this summer. Its ultimate capacity is



COMPARATIVE HEIGHT of dam at Tunnel G. S. is shown as the Generating Station, which will be now in operation, contribute 42,000 kw (56,500 hp) to Northwestern Ontario



DES JOACHIMS largest of the three new stations, will look like this when completed. Drawing shows eight units, only one now in operation. Ultimate capacity of 358,000 kw (480,000 hp) makes Des Joachims the second largest of Hydro's plants.

DES JOACHIMS "COMES IN"



Hydro's Second Largest Generating Station Will Add 480,000 H.P. To Resources Of Southern Ontario System

by

Harry M. Blake
Hydro News

PROVIDING the climax for a series of events considered to be unparalleled in 44 years of Hydro history, the Commission's Des Joachims power development, 38 miles upstream from Pembroke on the Ottawa River, was officially opened on June 28. Among the invited guests were Provincial Cabinet ministers and members of the two sister legislatures — Ontario and Quebec — mayors, township reeves and members of municipal councils, representatives of the press and a large number representing practically all categories of Hydro consumers in Southern Ontario.

This 480,000 horsepower development, in its romantic setting of river and forestclad hills, is destined to bring more solid benefits to the people of Ontario than were ever dreamed of by Champlain and the *voyageurs* of old as they sought through the Ottawa a short-cut to the Pacific Ocean.

Des Joachims ranks second only to Queenston among the 63 hydraulic generating stations now in operation on the Ontario Hydro system. Two of its eight units with a capacity of 120,000 horsepower were brought into operation during the ceremony. Four more units representing an additional 240,000 horsepower, will be brought into service progressively during the remaining months of this year, while the total capacity of 480,000 horsepower will be available early in 1951.

The cost of the development, including generation and step-up transformation, is estimated at $75,775,000. Cost of transmission to the major distributing points is expected to run to an additional $25,000,000.

The new power brought into service this June, it is pointed out, is a substantial addition to supply already made available through the Commission's $605,000,000 postwar construction program. Prior to June this year four new developments were already adding a total of 215,500 horsepower to the Com-



TWO UNITS are now in operation at Des Joachims, Hydro's largest postwar development, w the remaining six scheduled for service within the next six months. Photo above shows part the downstream face of the concrete powerhouse, now being completed, and a section of tailra

BIG MOMENT at Des Joachims. At the request of Premier Leslie Frost, Hydro Chairman Rob H. Saunders steps forward to press button. At the touch, two generators started humming wh sent an additional 120,000 horsepower surging over Hydro's lines to the people of Ontar

mission's pre-war power pool of approximately 2,000,000 horsepower. These were a 75,000-horsepower addition to Hydro's De Cew Falls plant in the Niagara district; the 80,000-horsepower Stewartville station on the Madawaska River; the 53,000-horsepower Aguasabon station in the Thunder Bay district, and the 7,500-horsepower addition to the Ear Falls station on the English River, serving the Patricia district in Northwestern Ontario. The total of 432,000 horsepower already made available does not take into account some 80,000 horsepower in emergency steam generating stations.

Approximately 1,600,000 horsepower will be derived from the Commission's present program, and most of it will be available before the end of the next year while the 192,000 horsepower La Cave project will round out the biggest post-war construction program of its kind in Canada when it is brought into service in 1952. In that year, including purchased power, the Commission will have at its disposal a power pool of approximately 4,600,000 horsepower, practically doubling its pre-war supply.

Des Joachims has been designed with an operating head of 130 feet. The mas-



sive main dam closes three channels of the Ottawa River and extends from the Ontario to the Quebec shoreline. The structure is 2,400 feet long, with a maximum height of 180 feet above sound rock. Headworks and powerhouse are incorporated near the centre of the dam. Adjacent to and north of the main dam, there is an auxiliary dam, approximately 1,300 feet long and 50 feet high, closing off a low spot on the new shoreline in order to maintain the headpond at the 500-foot contour above sea level.

Controlling a flood discharge channel of the river north of the main stream, another dam was built at McConnell Lake by the Atlas Construction Company, according to the plans and under the supervision of the Commission. This structure is approximately 1,600 feet long, with a maximum height of 130 feet and incorporates forty 16-foot stoplog sluices and six 40-foot sluiceways with steel gates.

Varied Engineering Job

Des Joachims was a project in which nearly every branch of engineering was represented and the assistance of a wide variety of trades and skills enlisted. Before actual construction could begin, not only the site for the station but also a flooding area extending back to the town of Mattawa, 57 miles distant, had to be surveyed. Provision had also to be made for the diversion and rebuilding of 23 miles of the main transcontinental line of the Canadian Pacific Railway and 12 miles of Provincial Highway. The lake created as a headpond for the development has been re-named Holden Lake, as a tribute to Dr. Otto Holden, Assistant General Manager-Engineering, an internationally eminent hydraulic engineer.

The assistance of the Hydro Laboratory was continually called upon to determine the character of the concrete mix for different purposes and to test the steel and other materials used in construction. Hydraulic and construction engineers supervised a wide range of activities, and as the work progressed and installations were made, the electrical engineering staff was required to solve many vexing problems.

Excavation was a big task in itself. It meant digging and blasting down to sound rock foundations for the permanent structures, cutting a tailrace channel some 7,000 feet long and 175 feet wide through solid rock, and clearing for the highway and railway diversions and the permanent roads of access to the site. Altogether, 2,344,000 cubic yards of earth and 3,596,000 cubic yards of rock were excavated.

Concrete Examples

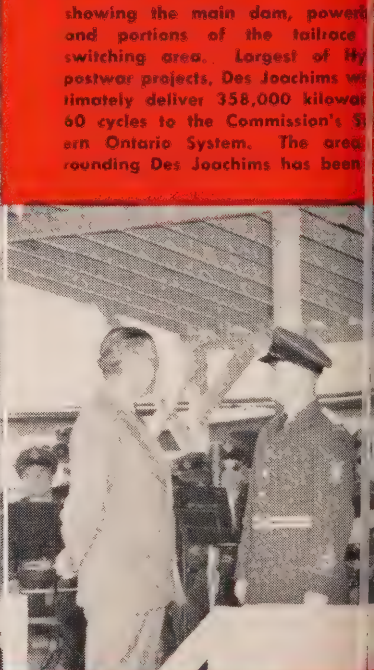
A total of 880,000 cubic yards of concrete went into the building of the permanent structures. It is estimated that this would be about enough concrete to build a standard 4-foot sidewalk across Canada from the Atlantic to the Pacific. And, for those who find pedestrianism as unattractive as the



GENERAL VIEW OF DES JOACH showing the main dam, powerh and portions of the tailrace switching area. Largest of Hy postwar projects, Des Joachims wi timately deliver 358,000 kilowa 60 cycles to the Commission's S ern Ontario System. The area rounding Des Joachims has been



INSIDE THE POWERHOUSE at Des Joachims the audience listens to Hydro Chairman Saunders express appreciation to the men who planned and built the huge 480,000-hp development. Mr. Saunders also praised the manufacturers and suppliers for speeding up deliveries of essential materials and equipment, one of the factors which assisted Hydro to place this project in service ahead of schedule.



PREMIER LESLIE FROST chats with of the R.C.A.F. Central Air Comma who played at the opening. T received favorable comment fr



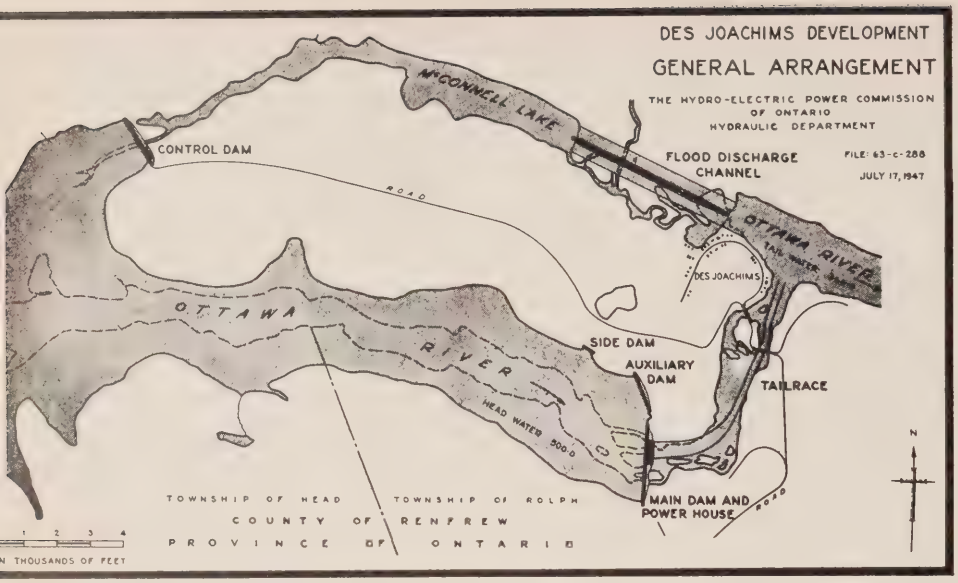
iderably changed since work began
t the site (see photograpns on p. 13)
or, apart from local changes, con-
truction has involved the clearing of
1,000 acres of land between Des
oachims and Mattawa (57 miles
way) and the diversion and rebuild-
ng of 23 miles of main C.P.R. line
nd 12 miles of provincial highway.





nce, and was included in an appreciа-
ve message from Chairman Saunders when
he anked all who planned and participated
n e impressive Des Joachims ceremony.

OPENING CEREMONY VISITORS making their way into the powerhouse at Des Joachims to witness the of-
ficial launching of Hydro's second largest plant. The third Hydro development to be opened in [illegible]
Joachims will add 480,000 hp to the Commission's resources. Two units, with a total capacity of 120,000
hp were placed in service in June. Six more units will be brought into operation during the next few months





MAGNITUDE of Hydro's senior postwar power project is indicated in the general arrangement perspective shown above. Two men at the left are W. M. Hogg, Resident Engineer, and Project Manager Angus Richardson, in charge of field engineering and construction at Des Joachims. Head Office group, below, left to right, R. W. Chandler, Assistant Project Engineer, J. W. Crerar, Project Engineer, and G. H. Bradshaw, Assistant Project Engineer.



word, another comparison has been made. This amount of concrete, it is said, would be sufficient to build substantial basements for 28,400 six-roomed dwellings in a modern housing plan.

Lumber — part of it salvaged from the clearing operations — was widely used for camps, forms and construction timber at Des Joachims. Approximately 18,000,000 board feet were utilized, equivalent to 720 carloads or the lading of a timber-carrying train six miles long. Steel, including the Bailey bridging used for conveying and placing concrete, ran to 5,600 tons or the equivalent of 140 fully-loaded flat cars.

Small Army Employed

Peak construction periods at Des Joachims saw 3,100 workers employed. At times the Commission alone had more than 2,500 men on the job. All these men were comfortably housed in modern camps. A hospital, with a resident doctor and registered nurses, as well as facilities for recreation and study were provided, while there were church services on Sundays.

Distribution Of Power

Power from Des Joachims is generated at 60-cycles and transmitted over 230,000-volt lines to distributing points at Kipling (near Toronto), Burlington, Westminster (near London), and Essa (near Barrie). Part of this power is being fed into the 25-cycle areas through frequency-changer stations at Scarborough and Westminster until standardization at 60-cycles is completed in Southern Ontario.

There will be a 230,000-volt line initially operating at 115,000 volts, connecting Des Joachims with Hydro's 192,000-horsepower development now under construction at La Cave, some 5 miles north of Mattawa on the Ottawa River. Pending the bringing into service of La Cave in 1952, some power from Des Joachims, if needed, will be transmitted to Northern Ontario over this line, now completed, to La Cave; thence over a 115,000-volt line, now being built, via Crystal Falls and North Bay to Sudbury. This additional service for the north, supplementing that of Hydro's Tunnel station on the Mississagi River, is tentatively scheduled for inauguration in October.

Expanding Grid System

Two years hence, with the completion of the La Cave Generating Station, the grid system providing for the interchange of power between Northern and Southern Ontario will assume more tangible form.

It is understood that the Commission envisages a time, not too remote, when there will be a tie-in between the Ontario Hydro System and power systems in Quebec, Manitoba and adjacent districts in the United States.



McCONNELL LAKE CONTROL DA







DES JOACHIMS IMPRESSION

HEAD TABLE GUESTS at luncheon following official ceremonies included (upper left) Mrs. J Bourque, G. W. Lawrence, Bill Hogg and A. W. Mac

ANOTHER GROUP at the head table in the mod cafeteria (above, right) comprised A. Dussault, M Crump, H. R. Graham, H. A. Cooch, and Rene Dup

MAYORS AND REEVES of some 25 Ontario munities were among the guests at the ceremo (left). Their names appear elsewhere in this

QUEBEC AND ONTARIO were both well repres at the Des Joachims opening. Lower left photo Hon. O. Gagnon, R. C. Berkinshaw, Angus Richar

WELL-KNOWN LABOR REPRESENTATIVES were present at ceremonies (lower right). With T Hydro's Bert Merson are H. J. Sedgwick, R. H





"MASSIVE DEEDS - - -"

(Continued from page 5)

cut, yes, slashed through red tape to let us get on with the job and complete our work on time."

There were many others to whom the Hydro Chairman wished to say a sincere thank you. For example, he recalled the fine co-operation which Hydro had received from people in these areas where the power shortage had, at times, been acute. He remembered the "magnificent conservation effort" by domestic consumers, industries, commercial consumers and particularly retail merchants. He recalled the effective efforts of public spirited citizens and service clubs during the difficult days when Hydro's resources had been taxed to the very limit. "We remember that co-operation with a deep sense of gratitude," said Mr. Saunders.

One of the news highlights of these history-making June events came when, with Chairman Saunders' left index finger on the switch button at Des Joachims, Premier Frost announced: "In a few minutes, when the button is pressed, all power restrictions will be ended. We are witnessing one of the great turning points in our history. We have successfully met the power crisis arising out of the war. We have now a very necessary reserve instead of an acute shortage. Ontario and her municipalities can say to our people 'go ahead and develop; we will protect you."

The Premier re-echoed sentiments expressed by the Hydro Chairman in thanking Hydro employees, suppliers, retail merchants, industry and other consumers for the many forms of co-operation which had helped facilitate the building of new power plants.

Symbolic of the entente cordiale between two sister Canadian provinces was the presence of Hon. Onesime Gagnon, for many years Treasurer of Quebec, and his distinguished colleague, Hon. John Bourque, Minister of Lands and Forests.

"In the name of Ontario," said Premier Frost, "I thank our sister province, through her distinguished representatives, for the help, co-operation and thoughtful consideration which we have received."

At one point in his address at Des Joachims, the Premier warned that while "a turning point" had been reached, they could not be complacent. "More power," he declared, "is necessary for a growing Ontario. We must turn without delay to Niagara and the St. Lawrence. We must look to the Congress of the United States for favorable consideration of the treaties involved."

Des Joachims in Retrospect









British Teams Visit Queenston

FAMOUS British soccer players who perform before crowds of 50,000 to 100,000 fans in their homeland and who attracted record crowds while on a tour of Canada and the United States acclaimed their visit to Hydro's Queenston development and Niagara Falls as one of the highlights of their visit to this continent. Actually, there were two teams — the top-ranking Manchester United club and the members of the all-star English International team. The photographs shown here were taken at the Queenston plant, the top illustration showing members and officials of the Manchester United team as well as Hydro personnel. In the foreground of the lower reproduction showing members of the international aggregation are two of England's leading soccer officials — H. Hughes and J. Richards, standing beside one of the Commission guides.





LARGEST NIPIGON PLANT

Will Have Ultimate Capacity of 160,000 H.P.



TH AN INITIAL OUTPUT OF 40,000 H.P., Hydro's Pine Portage Generating Station on the Nipigon er was placed in service on June 21. Official opening ceremony attracted large audience.

HYDRO'S 80,000 horsepower Pine Portage development, located on the Nipigon River about ten miles south of Lake Nipigon, was officially opened June 21. It was constructed at a cost of approximately $26,300,000 for generation and step-up transformation, with an additional outlay of $1,050,000 for transmission to focal distribution points. There will be initial deliveries from one generating unit of 40,000 horsepower capacity. A second 40,000 horsepower unit will be in operation later this summer. There is provision in construction for an ultimate increase of total capacity to 160,000 horsepower.

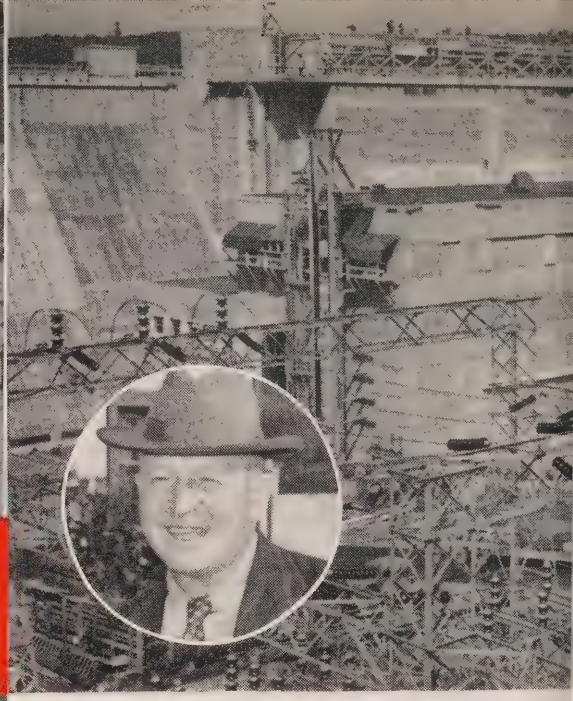
Dependable Water Storage

Pine Portage, with an operating head of 105 feet, is the third development to be carried out by the Commission on the Nipigon River. Approximately 12 miles below it are the Cameron Falls and Alexander generating stations, with a combined installed capacity of 148,000 horsepower.

For all three developments Lake Nipigon provides a natural water storag

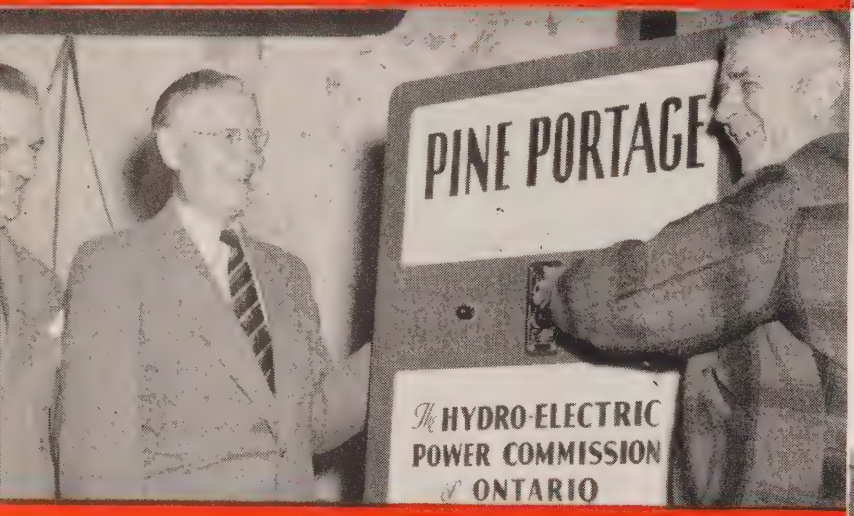


NSTRUCTION of Pine Portage called for many conferences between Construction erintendent L. J. Gallagher (wearing hat) and Acting Resident Engineer J. Stirling (above). Photo at right shows section of dam and powerhouse, with tching structure in the foreground. Inset is H. A. Johnson, Resident Engineer.



of approximately 10,000,000 acre feet and furnish an almost complete regulation of inflow from t surrounding watershed, including the Ogoki div sion. These conditions, it is pointed out, enal the stations on the Nipigon River to operate at higher load factor. In other words, they can tu out power close to full capacity at nearly all tim This is a very great advantage, especially with gard to Hydro services to the pulp and pap companies concentrated at the Lakehead. T production of newsprint is an all-round-the-clo operation and a dependable supply of power m be available at all hours of the day and night

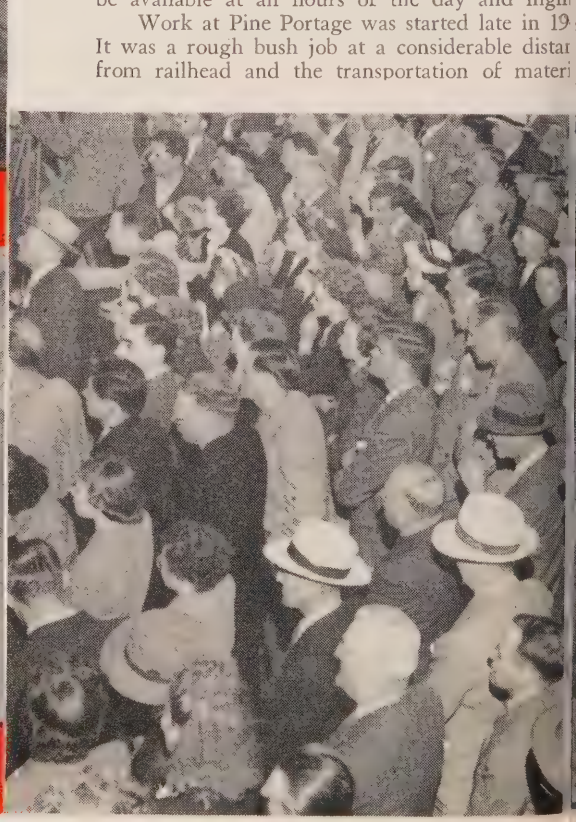
Work at Pine Portage was started late in 19 It was a rough bush job at a considerable distar from railhead and the transportation of materi



AVID LEE, veteran Hydro construction employee, pressed the button to start first 40,000-hp unit at Pine. Watching are Chairman Saunders, Premier Frost.



O BIG CHIEFS have a pow-wow. Flanked by Mounties are Hydro Chief Saunders Ojibway Chief Joe Sault Kagigetagos, who attended Pine opening. At right is [illegible] watching the official ceremonies at the station.







HEAD OFFICE ENGINEERS, left to right, O. E. Johnston, Project Engineer; A. Greer, Assistant Project Engineer (Electrical) and J. H. Rogers, Assistant Proj Engineer (Civil) check over blueprint for Pine Portage development, the larg of the Commission's three generating stations on the Nipigon Riv

equipment and supplies presented problems not encountered on other Hydro projects under construction throughout the province. A heavy-duty road had to be built through difficult country, while the river was also used for transport in the early stages. Special attention was directed to the housing of the 1,300 men engaged on construction. In addition to comfortable dormitories, the Commission provided such facilities as a modern hospital, a recreation hall, a school and a post office.

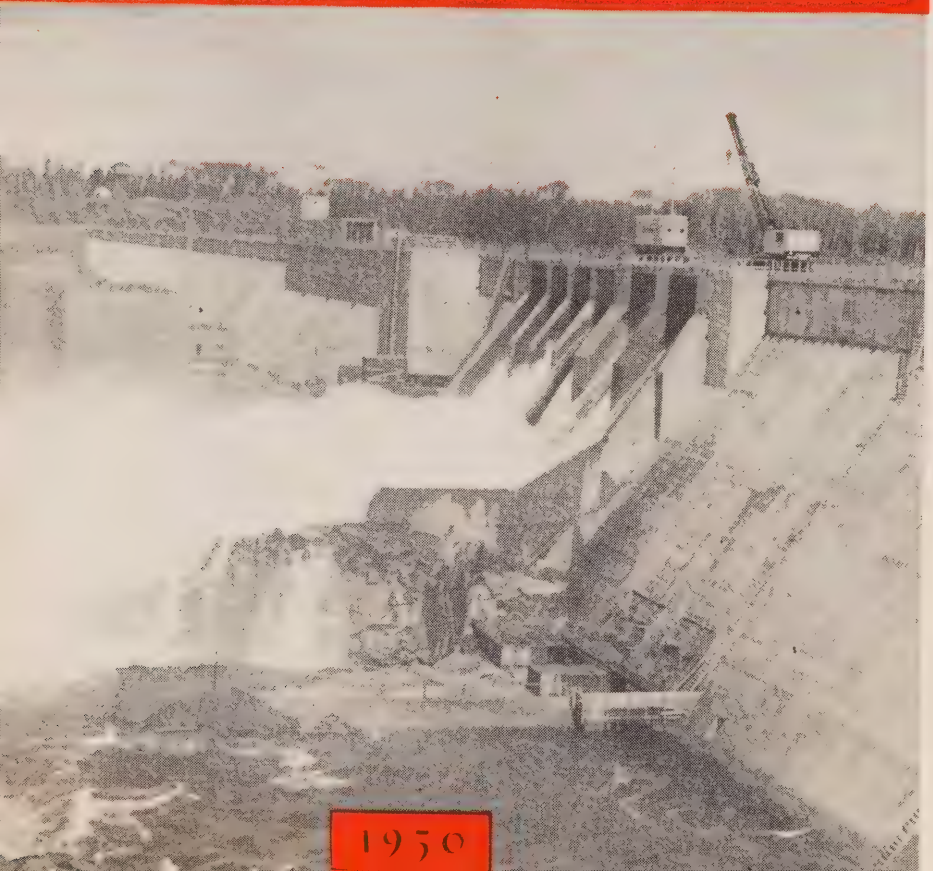
Pine Portage development is dominated by a massive dam spanning the river, with a total length of 3,000 feet and a maximum height of 140 feet. The powerhouse, 286 feet long, is located at the base of the dam on







RE AND AFTER AT PINE PORTAGE! These two comparative views indicate the change which has place since construction was first begun, at Hydro's new Nipigon River project. Upper photo- shows clearing along the main dam line early in 1948 with the river in the foreground. Photo , taken from almost the same point as the one above, shows the completed dam and powerhouse.



the west bank of the river. Water is conveyed to the turbines through steel penstocks, 20 feet in diameter, encased in concrete. After discharge from the powerhouse, the water is returned to the river below Pine rapids by means of a 600-foot tailrace, cut through solid rock. A slipway section, containing six sluices, has a total discharge capacity of 42,000 cubic feet per second.

To obtain the headpond for the development, the water level in the river above the dam has been raised approximately 100 feet to the level of Lake Nipigon. On a Provincial Government log scale basis—regarded as a conservative estimate — approximately 1,574,000 board feet of merchantable timber were salvaged and some 40,382 cords of pulpwood which, on a rough estimate, is said to be sufficient for the production of 40,000 tons of newsprint, or enough, taking the average weight as 8 ounces, for the production of 160,000,000 copies of a big metropolitan newspaper.

Power Services

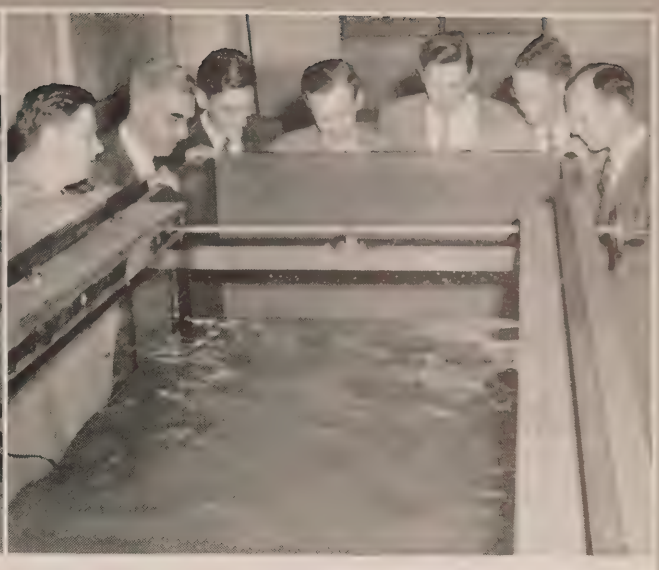
Pine Portage is connected with the Commission's transformer station at Port Arthur—a distance of 80 miles—by a 115,000-volt double-circuit, steel-tower transmission line. From Port Arthur a 115,000-volt single-circuit wooden pole line carries power across country to Moose Lake, whence distribution is made to the iron mines at Steep Rock. The bringing in of Pine Portage enabled the Commission to increase its loads to this important industry as well as to many others. In fact, it is planned to extend the line from Moose Lake to Dryden, where it will connect with the circuits from Hydro's 25,000 horsepower Ear Falls Generating Station on the English River, which supplies power for the towns of Dryden and Sioux Lookout as well as for 13 gold mines in the Patricia and Red Lake areas.

Area Resources

A summary by the Commission shows that it will have at its command this summer a pool resource of 318,000 horsepower for the service of municipalities and industries in the Thunder Bay area and adjacent territory to the west. Ultimate doubling of capacity at Pine Portage, for which provision has been made in station construction, would bring total resources up to 398,000 horsepower.

Hydro, Chairman Saunders points out, has been investigating several potential power sites on the English and Winnipeg Rivers. It has been estimated that a total of 248,000 horsepower could be made available from these developments, which, it is understood, would fit in with any plan for the interchange of power between Ontario and Manitoba.





Joint Engineering Convention

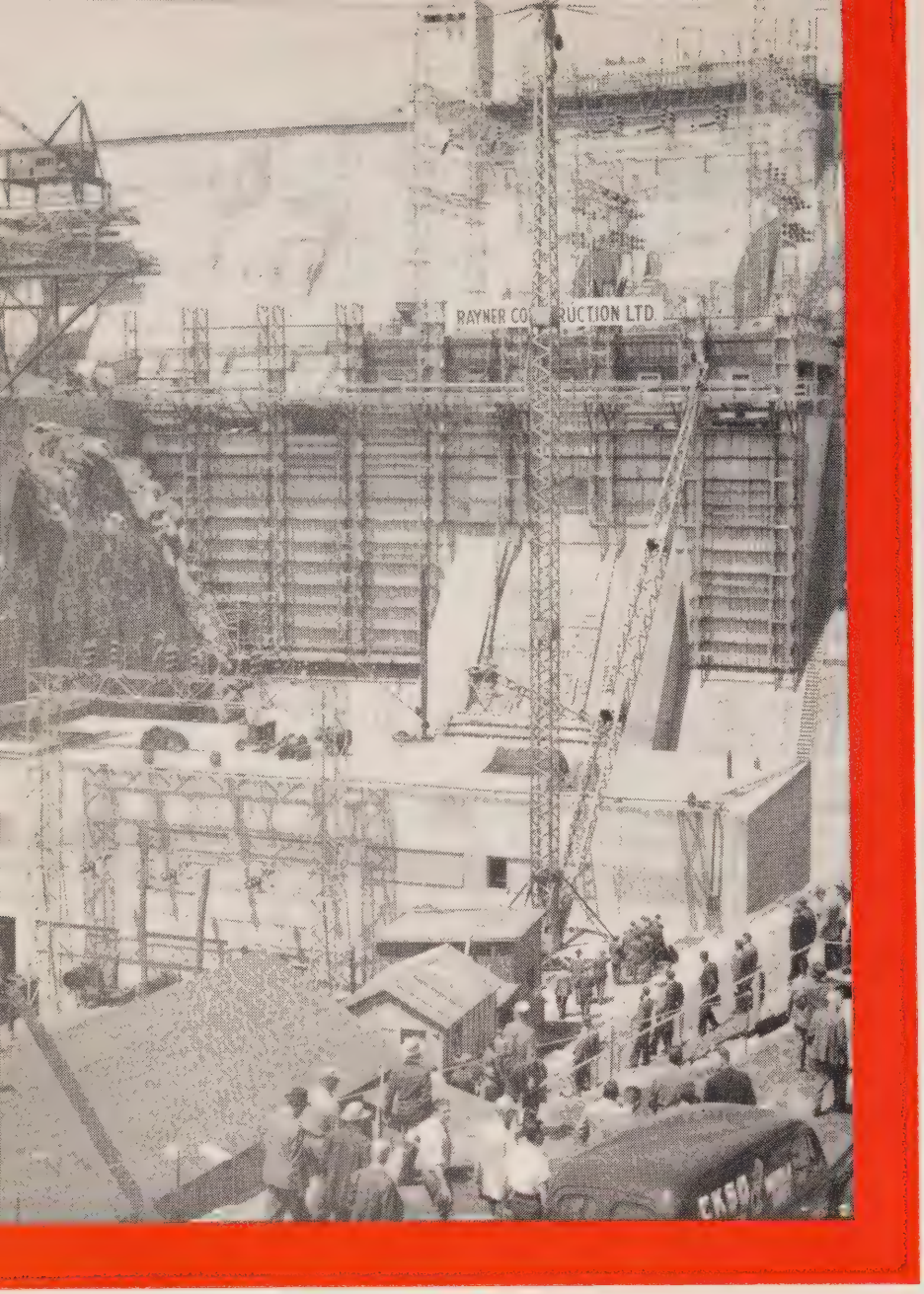
ENGINEERING delegates from both sides of the border recently attended a joint convention in Toronto, which combined the 64th Annual General Meeting of the Engineering Institute of Canada with the Annual Summer Meeting of the American Society of Civil Engineers.

After business meetings held by the respective organizations, delegates joined forces to attend a number of technical sessions dealing with a variety of engineering topics. Included in the sessions on the first day of the convention was an interesting address given by J. R. Montague, Director of Engineering for H.E.P.C., who spoke on "Engineering Aspects of the Ottawa River Developments."

Highlighting addresses on hydraulic models, which were given by J. J. Traill and J. B. Bryce of Hydro's Generation Department on the second day of the convention, was a trip to the Hydraulics Laboratory of the University of Toronto. Pictured at the laboratory **(above left)** delegates listen to J. J. Traill (third from right) give some facts on the model used in tests for Hydro's Pine Portage development. **Above right:** Delegates inspect the glass-walled channel used for some of Hydro's experiments at the laboratory.

A feature of the annual meeting of the Canadian Institute was the election of a new president and officers. Pictured below are a group of the officers together with the retiring and newly elected presidents. **Back row**, left to right—A. W. Whitaker, Aluminum Co. of Canada; J. E. Armstrong; C.P.R.; E. O. Turner, University of New Brunswick; **Front Row,** left to right—Drummond Giles, Courtauld's (Canada) Ltd.; R. A. Heartz, Shawinigan Engineering Co.; J. A. Vance, Woodstock, Ontario, and W. J. W. Reid, Otis Elevators. **Inset:** J. A. Vance, new president, is congratulated by Past President J. E. Armstrong.





TUNNEL DEVELOPMENT

Hydro's New Mississagi River Station Is Placed In Service

by
Harry M. Blake
Hydro News

IN the heart of the rugged Algoma forests, the turbulent Mississagi River, long the servant of the fur trader, the lumberman and the sportsman forged a new link with Northern Ontario industry on June 14.

At the towering Tunnel Development, some 18 miles from Thessalon, with Premier Leslie M. Frost officiating, James Boyd, one of the workmen on the project, pressed a button which set in motion the two generating units, which are now sending 42,000 kilowatts (56,500 hp) of hydro-electric energy over a new power line to Sudbury where it is being fed into the rich and growing north-eastern section of the province.

Construction of the Tunnel project began in September, 1947. About 1,000 men were employed at peak periods of activity. Cost, including generation and step-up transformation, is estimated at $16,600,000. Additional cost of transformation to major distributing points will be approximately $2,200,000.

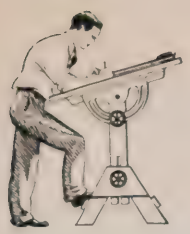
Tunnel was a big clearing and excavation job. In addition to the preparation of the site for the dam and powerhouse structure, a large area at Rocky Island Lake, some 50 miles upstream, had to be cleared to provide adequate water storage. Altogether, some 11,500 acres were cleared. Well over 6,000,000 board feet of serviceable timber and approximately 21,600 cords of pulpwood were salvaged. It has been calculated that the salvaged timber would be sufficient for the erection of about 400 six-roomed houses, while the pulpwood recovered would be enough for the production of approximately 20,000 tons of newsprint.

Construction Features

A feature of this development was the construction of a tunnel to divert the river so that the crews could work on the foundations of the dam and powerhouse in the dry. Nine hundred feet long, with a diameter of 30 feet, this tunnel was blasted out of the solid rock. As the steep face of the gorge downstream made it impossible to work at the job from both ends, the excavation had to be carried out from the upper portal, adding many man-hours of labor to the undertaking. With the completion of construction, this tunnel was sealed off, and there is now nothing to show for the immense amount of labor required for its building apart from the records on the contractor's books.

Tailrace Excavation

Another important excavation job — and this time a permanent memorial to the construction crews — was the digging of the tailrace. This channel, through which the water, after passing through the turbines, is returned to the river, is 1,800 feet long and 40 feet wide. It



involved the excavation of 60,000 cubic yards of rock and gravel, or approximately 120,000 tons.

At the station site, the Mississagi River flowed through a narrow, rocky canyon, whose sides rose obliquely like a gigantic "V". The main dam, with the powerhouse at its base, now fits into this "V" like a great wedge, closing hard and fast on the gorge. Not very wide at the foot, it rises to a maximum height of 235 feet above rock foundations and extends 1,000 feet across the top. Two side dams, one close at hand, 1,080 feet long and 45 feet high, and the other 2½ miles upstream, confine low sections of the flooded forebay.

Bailey Bridging Used

About 220,000 cubic yards — 440,000 tons — of concrete were placed for the permanent structures at Tunnel. An additional 15,000 cubic yards were used in the construction of the main control dam and three side dams at Rocky Island Lake. Bailey Bridging units, instead of the conventional wooden pouring forms, were used exclusively — approximately 1,500 tons of form and trestle steel at the station site and some 30 tons at Rocky Island Lake. During the construction of the main dam and powerhouse, the towering steel pouring cage, composed of 15 Bailey monoliths, was an impressive and memorable sight.

On the eastern side of the main dam there are nine sluiceways of reinforced concrete. They are each 16 feet wide and 20 feet deep. They discharge surplus water through an excavated channel into a creek draw, which, in turn, conveys it back to the river 3,200 feet downstream from the powerhouse. These sluices are designed to take care of any spring freshet. A log chute, 890 feet long, has also been provided to carry saw-logs safely past the dam into the deep gorge — a drop of 215 feet.

Tunnel transmits power directly to Sudbury over a 115,000-volt transmission line, 132 miles long. There are 124 miles of single-circuit twin-pole line, while the last eight miles into Sudbury are double-circuit with steel towers.

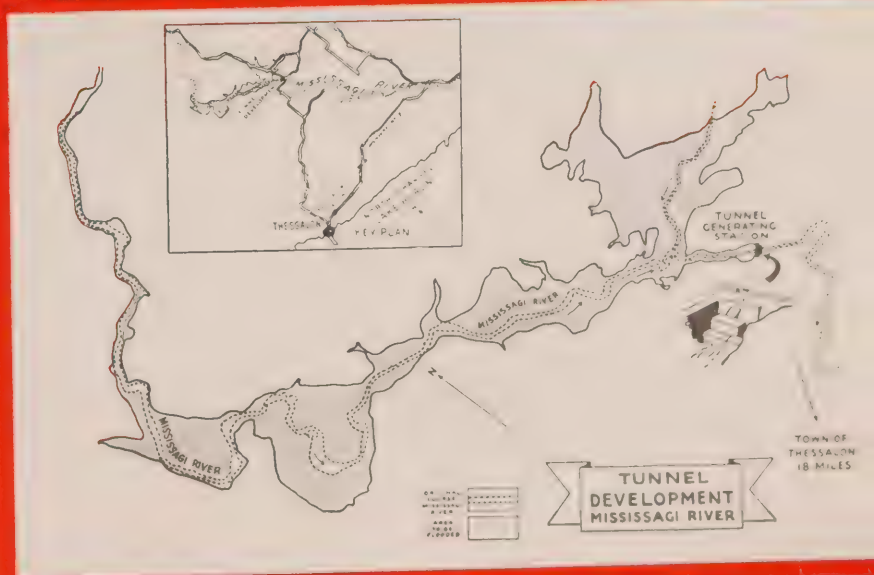
Much of the power from Tunnel is to be used at the generation frequency to meet the increasing demand of 60-cycle consumers. It will, however, be pooled power, and through the new frequency-changer station at Sudbury, as well as by

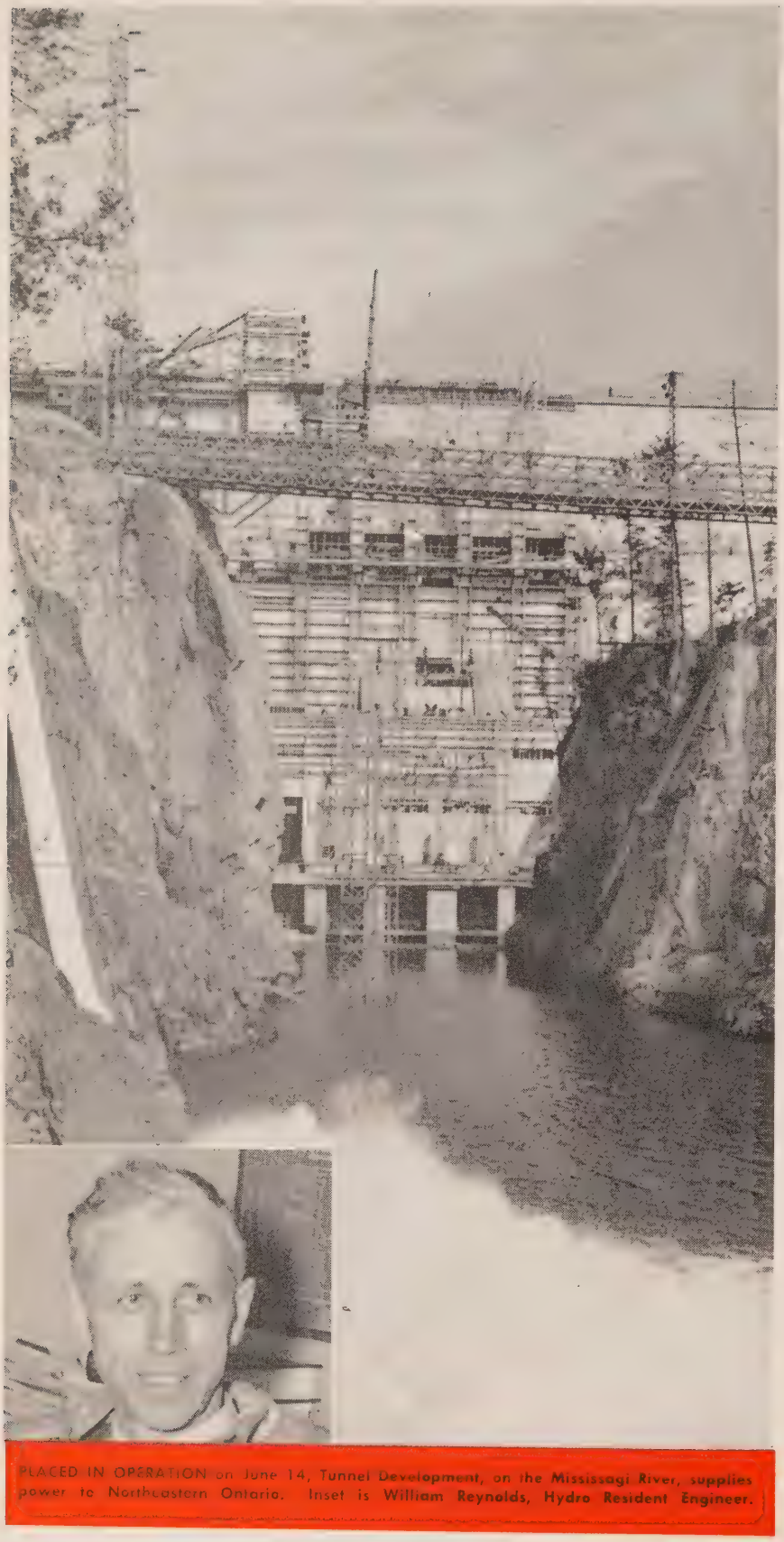


JAMES BOYD, veteran employee of Rayner Construction Ltd., [illegible] project, presses button to set new plant's two units in operation. With him are Foreman Saunders, George Rayner, President of Rayner Construction Ltd., and Premier Hep[illegible]



THIS GROUP, including, left to right T. G. Willows, Assistant Project Engineer (Civil); A. S. Moss, Assistant Project Engineer (Electrical); and Frank Greenwood, Project Engineer, have been in charge of engineering matters for the Mississagi development at Head Office.





PLACED IN OPERATION on June 14, Tunnel Development, on the Mississagi River, supplies power to Northeastern Ontario. Inset is William Reynolds, Hydro Resident Engineer.



means of older frequency-changer units at Kirkland Lake, a good deal of it is to be made available at need to 25-cycle consumers.

Planning More Power

It is pointed out by the Commission that the bringing into service of Tunnel Generating Station is only the first step in providing more power to pace development in Northern Ontario. In the Sudbury district occurs the world's greatest concentration of nickel, associated with important deposits of copper ore. By-products of the nickel-copper mining are such highly-prized metals as platinum, palladium, iridium, rhodium, ruthenium and selenium.

There are some 50 gold mines in the territory served by the Ontario Government's Northern Ontario Properties which are controlled and operated by Hydro. In addition there are silver mines, which in spite of the adverse market conditions prevailing since the boom days of forty or more years ago, are expected in some quarters to be due for at least a moderate revival. Altogether, there was an installed capacity of more than 339,000 horsepower to meet total consumer demand in the four integrated districts of this richly mineralized territory. Tunnel brought available resources up to above 395,500 horsepower.

Chairman Saunders has made it known that the Commission is preparing to meet both a wider and more intensive

THE HUMAN TOUCH

(From The Sudbury Daily Star)

THE little human touches that come spontaneously from Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario, and Premier Leslie Frost are factors that contribute to the popularity of these two men in Ontario's public life. Dignitaries by the dozen were present at the official opening of the Hydro Tunnel project near Thessalon. Many would have enjoyed the honor of pressing the button that put the 56,500 horsepower plant into operation.

Both Premier Frost and Mr. Saunders stepped aside in favor of a workingman — a master mechanic-blacksmith, who had toiled by the sweat of his brow by the side of his fellow workers to materialize a blueprint. The gesture was a fitting tribute to the men who performed the actual manual labor.



STED SPECTATORS included Mayor Campbell E. Cork, Thessalon; Reeve Anne , Teck Township and Hon. Harold Scott, Minister of Lands and Forests.



CHATTING WITH J. R. MONTAGUE Hydro's Director of Engineering, at luncheon Alex Grant, retired Government of Canada engineer, and W. G. Pemberton, [illegible]

development in this heavily mineralized section of the province. There are three more sites on the Mississagi River now under investigation and estimated to have a total potential capacity of about 110,000 horsepower. But consumers in Northern Ontario will not have to wait until these are developed for more power. In October, if needed, the new power from Tunnel will be supplemented by power from Hydro's 480,000 horsepower generating station at Des Joachims on the Ottawa River. A 230,000-volt transmission line over which 115,000-volt power will be temporarily transmitted, is now completed from Des Joachims to La Cave, and construction is well advanced on a 115,000-volt line which will carry on from La Cave to Sudbury via Crystal Falls and North Bay.

Although power from the Des Joachims development will be available to the Sudbury district in October of this year, the dream of Commission engineers — a tie-in providing for a two-way exchange of power between Southern and Northern Ontario — will be realized when the 192,000 horsepower La Cave development, now under construction, comes into service in 1952. And looking farther ahead, Hydro's vision sweeps on to the integration of all Hydro systems, with interconnections with Quebec, Manitoba and the United States.





ARRIVING TO ATTEND Tunnel opening ceremony, the quartette, above, including R. H. Martindale, Secretary-Manager, Sudbury Hydro-Electric Commission; Alex Skene, retired Hydro operating superintendent, Sudbury; Aldermen Alex McKinnon, and Ken McNeil, Sudbury, seem well-pleased with proceedings. **BELOW**, this smiling foursome, left to right, Reeve George Miller, McKim Township; Mayor W. S. Beaton, Sudbury; Hon. W. E. Hamilton, Ontario Minister of Reform Institutions and P. R. McAdam, Area Manager, Sudbury R.O.A., seemed to be in an equally jovial mood



IT'S A BIG JOB

Equipment of 16,600 Industrial Plants in Southern Ontario are Scheduled for Change-over

by C. G. W. MacIntosh
Hydro News

BIGGEST engineering task associated with Hydro's Frequency Standardization Program is the change-over of equipment from 25-cycle to 60-cycle operation in some 16,600 industrial plants in the Commission's Southern Ontario System.

It is a job that requires not only accurate engineering, but also careful planning and precision timing.

The efficiency which has marked this work is reflected in letters received from the managements of many plants that have been changed over to date.

An excerpt from a letter recently received by Hydro Chairman Robert H. Saunders, from a large industrial concern, indicates how the program can be mutually satisfactory. It reads, in part, as follows:

". . . We wish to compliment your organization . . . on the splendid job that was done in carrying out the work of conversion in a manner that cost us a minimum of inconvenience and with a maximum of dispatch."

That is the essence of the program—to carry out the change-over in industrial plants with a minimum of inconvenience, and the least possible interruption to production schedules in the factories.

Some idea of the magnitude of the job involved in completing the necessary work in industrial plants, can be formed when it is remembered that the total load of some 800,000 Southern Ontario consumers of all classes affected by the program is 1,880,000 horsepower—yet the load of the 16,600 industrial consumers represents 1,468,000 horsepower of that total!

Because of the diverse methods of manufacturing, even in plants making similar products, virtually every factory being changed over to operate on 60-cycle current poses an engineering problem.

However, it is tackled in a thorough manner and by very definite steps. The pattern of dealing with industrial change-overs is the same in all cases. First, Hydro advises the industrial consumer by letter, well in advance of the change-over date, that the district will be supplied with 60-cycle power. Then Hydro negotiation engineers call on factory officials and explain the standardization program, requesting the company's consent to proceed with the change-over work in the plant. An approximate date when the work will take place is given, as an aid in arranging production schedules.

Next step is the issuing of clearance orders to Hydro's contractors, the Canadian Comstock Company, authorizing them to proceed with the change-over. Survey crews then are sent into the plant to make a thorough inventory of all equipment of a frequency sensitive character. The entire premises are checked thoroughly, even to the plant offices, where there may be frequency sensitive



PORTION OF changeover equipment at industrial plant in Scar o Township. In left foreground is the contractor's temporary office in centre, one of the portable machine shops in which a large numbe of small mechanical parts are adjusted to operate at the new freque

items, such as electric clocks, fans or refrigerators.

Complete information from the survey sheets is passed on to the contractor's engineers, who work out the engineering details for each piece of equipment. Belt-driven machinery generally requires changes in pulley sizes; directly-driven pumps, as a rule, must have the impellers trimmed to take care of increased speed, and chain-driven machinery necessitates changes in the sprocket size. In dealing with directly-driven equipment, such as saws, drill presses, etc., which are not usually speed critical, the motor only is changed. But each piece of equipment must be thoroughly studied and engineered, according to its own requirements.

All materials needed for changing over each machine are listed by the engineers and are ordered. The engineering instructions and information about the materials needed are passed on to the planning department.

Planning the work is an important operation. For most plants, complete booklets are prepared, listing every item on the premises that must be changed, what the changes are, and containing full details on how the work is to be carried out in each department and building of the plant. In addition, sets of blueprints are made up showing the location of every machine in the various departments of the plant, and the feeder lines connected to the machines in a section, also how the section is to be cut-over. These booklets are issued to the supervisors in charge of the change-over work. But before the crews of mechanics are scheduled to begin the actual standardization program in the plant, the planning staff makes a double check on the original survey to catch any late changes that may have been made in plant equipment.

Like Well-Drilled Army

When "C" Day arrives, the change-over crews move into the plant like a well-drilled army. Every mechanic has been thoroughly briefed and knows his assignments. Work is carried out in a systematic, previously-planned pattern to fit in with the plant's production schedule.

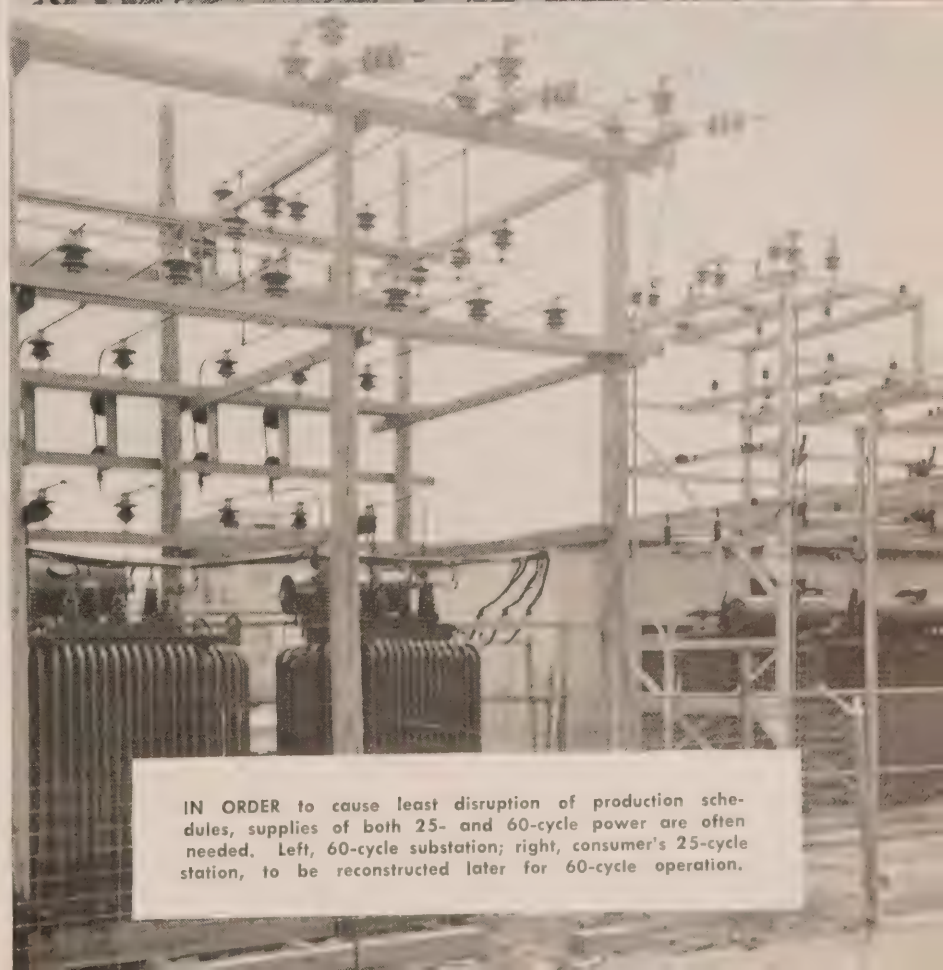
This, in general, is how the program is laid out in advance for industrial plants. But every job is a special one—and accurate timing is the big factor that assures success of the plan.

The work is essentially of a mobile nature. A huge trailer truck, a complete mobile workshop, moves into the factory's grounds and is strategically located near the scene of operations. The necessary materials and motors, carefully tagged for the designated equipment, are brought into a central place in the factory. The mechanics attack their assignment of carrying out the engineering instructions, section by section, in the plant, like well-drilled troops.

Power supply to the factory, to fit in with the program, is the special responsi-



LARGE MACHINES have many motors with interlocking control equipment. Changeover of such machines requires technical know-how, careful planning, efficient follow-through. Here, painstaking adjustments are made in industrial plant.



IN ORDER to cause least disruption of production schedules, supplies of both 25- and 60-cycle power are often needed. Left, 60-cycle substation; right, consumer's 25-cycle station, to be reconstructed later for 60-cycle operation.



FREQUENCY-SENSITIVE equipment is often located in out-of-the-way places. Above, change-over is carried out on motor situated in pit under the floor. Some 167,000 industrial motors will be converted for 60-cycle operation during the course of the standardization program.

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BELOW, LEFT—Great care and skill in handling equipment are essential to efficient change-over. These two men are making sure that couplings on the direct drive are perfectly aligned. Used 25-cycle motors are often rewound for 60-cycle operation, used elsewhere.

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BELOW, RIGHT—Its conversion completed, this large compressor is being put back into service, as workmen replace the belts. Equipment of 16,600 industrial concerns in Southern Ontario will be handled by Hydro's standardization crews, each piece individually.

bility of Hydro's engineers. In some cases, a short line extension is brought into the plant to feed 60-cycle power into a temporary bank of transformers, previously installed near the plant's substation.

As each section of the plant's equipment is changed over, the feeder line supplying that particular section of the factory is switched over to the 60-cycle power supply, as the work progresses, until the whole plant has been switched over to 60-cycle operation. Then the plant's permanent line and transformer bank is cut in to receive 60-cycle power.

Often an independent source of power supply becomes necessary before the job is finished, so that production in the plant can be carried on without interruption. To make this possible, portable frequency changer sets are brought in to supply either 60-cycle or 25-cycle power as required. These "frequency sets" act as a stop-gap source of power supply to assure a minimum of interruption or inconvenience for the industrial consumer. They also permit prior change-over work on some non-critical items.

Good use generally is made of 25-cycle motors removed from plants. Usually they can be re-wound by Hydro and made into efficient 60-cycle motors. Consequently motors handled in this way are available for swapping with 25-cycle motors being removed in other factory change-over jobs.

A typical example of the conversion of a large industrial plant was the job recently completed at an important factory, in Scarborough Township, that manufactures building products.

The initial step was a complete survey and inventory of all electrical equipment which was sensitive to a change in frequency. This was accomplished by sending teams of electrical and mechanical

(Continued on next page)





Grand Valley Metermen's Association



MORE THAN 125 DELEGATES from Central Western Ontario attended the Spring convention of the Grand Valley Metermen's Association held in Guelph recently. Left to right: W. R. Percival, Frequency Standardization Division, H.E.P.C.; Past President, J. G. Steiss, Kitchener Public Utilities Commission; F. W. Vogt, Hamilton; F. V. Garlick, A. J. Girdwood, and Secretary-Treasurer, W. J. Bishop, Geulph Board of Light and Heat Commissioners. Members of the 1950-51 executive are: President, Jerry White, Simcoe Public Utiilties Commission; Vice-President, Reg. Phillips, Brantford Public Utilities Commission; Samuel Murchie, Brantford Twp. Hydro-Electric Commission; William McLeod, Puslinch; O. Reiber, Waterloo Public Utilities Commission; L. J. Passmore, Delhi Public Utilities Commission. During the one day session several comprehensive addresses were given, including a talk on frequency standardization, and a program was outlined for the retirement of old type watthour meters. Appreciation was expressed for the efficient way in which J. G. Steiss gave the second half of his paper, "Induction Type Watthour Meters." The Grand Valley Metermen's Association was formed about 15 years ago and comprises a membership of over 125 municipal Hydro metermen, meter engineers, meter manufacturers, H.E.P.C. officials and members of the local Hydro commissions. The purpose of the Association is to provide information on all phases of electric meter design, operation and maintenance.

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IT IS A BIG JOB

(Continued from page 26)

technicians into the plant. In this way, both skills could be used to spot individual problems as encountered.

The teams systematically worked their way, machine by machine, until a complete record of the plant had been obtained. Each individual machine was listed and given an item number by which it was identified until "logged" as completed. There was a total of 820 "items" and the connected load of the plant amounted to 2,700 horsepower.

Survey Sheets

Survey sheets which contained the complete information of each machine were checked by survey supervisors before being sent from the plant to the screening section. A group of trained "screeners" made a close check to determine that all information had been recorded correctly and neatly. The complete survey of the plant was then assembled and forwarded to the contractor's engineering headquarters at St. Catharines. There, electrical and mechanical engineers determined the necessary equivalent in 60-cycle equipment required to change over each machine or other frequency sensitive item. When all necessary engineering had been completed, the engineering records, or cards, were sent back to the area where the big task of assembling all needed materials commenced immediately.

Make Complete Check

Simultaneously, the planning crew started to swing into action. Their task was to take all the cards and make a complete check of engineering as a double-check to make certain that the proper materials had been purchased and that no errors had been made in the survey.

Planning crews systematically proceeded through the plant, placing a tag on each piece of equipment to indicate the proper item number. They also made a complete blueprint of electrical feeders throughout the factory, showing the relative position of each item.

Meetings then followed with the plant management to work out a schedule for conversion which would be most convenient for plant production and for the frequency standardization program.

For the change-over of this plant, Hydro was able to supply both 25-cycle and 60-cycle power. The latter was brought into the plant by transmission lines, and a temporary bank of 60-cycle step-down transformers was installed.

Thoroughly-trained change-over crews, comprising electrical and mechanical technicians, were the next groups to move into the plant. They worked under the direction and guidance of a supervisor.

Initial step in the important job of making the actual change-over was to run sufficient temporary cable from the secondary of the transformers to temporary buss bars and breakers in the substation. At this stage the planning schedule became effective, and was followed rigidly so that all production machines in the plant could function properly.

Initial Cut-Over

The powerhouse was the initial cut-over and this was accomplished by using the plant's turbo-generator to supply 25-cycle voltage to one boiler while the other two were changed over to 60-cycle. The feeder circuit was swung over to the temporary 60-cycle buss.

The remainder of the plant was changed over, feeder by feeder, and the schedule was so closely maintained that there was a minimum loss of plant production. After all feeders had been cut over to 60-cycles, the temporary leads were taken out of the substation and the 25-cycle bank was disconnected from the main panel board. This was followed by the temporary 60-cycle bank being connected to the main panel during a six-hour shut down.

Changing over industrial consumers' equipment calls for close team-play between the consumer, Hydro, the contractor, the municipal power supply source, and the manufacturers who supply the materials for the job. With each member of the "big five" team playing its part, the industrial standardization program can be a smooth, satisfactory operation.

W. C. CALE DIES

WILFRED COVENEY CALE, Approving Engineer for Canadian Standards Association (formerly a branch of the H.E.P.C.) died recently at his home in Toronto.

With the Commission 33 years, Mr. Cale was immediate Past President of the Western section, International Association of Electrical Inspectors.

Born in Ethel, Ontario, he graduated in 1910 in electrical engineering from the University of Toronto. Mr. Cale was a Warden of St. George's Anglican Church for 14 years and Sunday School Superintendent for 10 years. He is survived by his wife, Muriel Carswell Cale; two daughters, Mrs. J. D. Chambers, Toronto; and Mrs. W. M. Adams, Kirkland Lake; and three sons, Arthur, Carswell and David, all of Toronto.

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



How can a cricket make so much noise for such a little thing? By the way do you know they can make holes in flannel, felt or other woollen materials—so get after them with an insecticide spray when you hear any in the house, even though you can't find them.

* * *

A sprinkle of fresh lemon brings out the best in a melon—any melon. Then add sugar, if you must.

* * *

He-man favourite: For a hearty sandwich filling put through the food chopper one slice (leftover) cooked liver, two slices cooked bacon, ½ green pepper and one inch cube cheese. Mix with salt and pepper and leftover gravy.

* * *

There's something about making watermelon pickle that makes us feel especially good. All you do (after removing pink flesh for fruit cups) is to cut into 2 by 1 inch pieces and soak in medium brine overnight. Drain, rinse in clear water, then boil 3 cups of cubes in clear water about 10 minutes. Meanwhile boil 1 cup vinegar, 1 cup water, ½ sliced lemon, 2 cups sugar and ½ teaspoon each of allspice, stick cinnamon and whole cloves. Add rind and boil until clear. Pack in sterile jars.

* * *

Wonder how many tried our recipe for Pickled Corn Cobs published in The Mixing Bowl column two years ago? Nothing seems to interest our snack bar guests more than these finger bites. Cobs, picked when about the size of your thumb, can be pickled in a variety of ways. You can put down as you do Watermelon rind.

* * *

Spiced beets can really look "washed out" if the measurements of vinegar and salt are not exact.

* * *

Grandmother recommended gingerbread as a winter dessert, but today we keep a package of mix on the shelf to use as soon as the summer apples are made into sauce. Pour the applesauce over squares of fresh gingerbread.

* * *

Toast! Some like it hard, some like it soft, some like it dark, some like it light. But regardless of personal preferences, toast is more easily digested than bread since the starch is changed into dextrine and soluble starch and the protein is parched.

* * *

It is expected that apple ice and apple ice cream will become an outstanding Canadian dessert. There has been considerable research to establish good flavour and colour.

* * *

Did you know that in ironing for a family of three the equivalent of 2½ tons is lifted? Did you know that standing up to iron puts fatiguing pressure on ten major muscles? Organizing the laundry basket and adjusting the board, iron and clothes rack save both time and energy.

* * *

Today many people enjoy iced tea during the summer months. The brisk flavour accompanied by a little lemon juice for tartness gives a "lift" to the weary. An Englishman in charge of an elaborate tea pavilion originated this style of tea service at the St. Louis World's Fair in 1904.

* * *

Tea stains may be removed from the glasses, cups or teapot by rubbing with salt and baking soda.

* * *

One pound of old cheese is equal in protein to a pound and a half of meat. Therefore cheese at 55 cents a pound would be a cheaper source of protein than meat at the same price. However one should select more green vegetables to accompany hot cheese dishes since cheese does not contain iron—meat does.

* * *

Contrary to popular belief, cold storage eggs do not spoil more quickly than other eggs after they have been removed from storage. Both fresh and storage eggs lose quality at the same rate.

* * *

Metal furniture that has been waxed is less likely to corrode and become dirty and smudged. Use a chamois squeezed out in cool water to dust after waxing.

* * *

Do not shake the can of self-polishing wax before you apply it; the mixture will not spread evenly or dry evenly.

* * *

To freshen dry lemons or limes that have not been cut soak them in warm water. If cut fruit has dried, place the pieces in a covered baking dish and warm over the tea kettle or in the oven.

* * *

Sour milk can be used to advantage. Before mould growth forms, use sour milk to make tea biscuits, waffles, chocolate or spice cake, mayonnaise, muffins, coffee cake and many other dishes. For one cup sour milk use one half teaspoon baking soda. Use half as much cream of tartar as baking powder required in recipe, and half as much soda as cream of tartar.

* * *

Don't forget you can add sliced radishes and chopped string beans to a can of consomme as a soup for supper. It's a good way to use garden radishes if folks are tired of nibbling them raw.

FACTS ABOUT CANNED FOODS

(1) **Canned foods will keep without spoilage as long as the can is sealed;**

(2) **It is entirely safe to leave food in the open can if it is covered and stored in the electric regrigerator, like other cooked foods. However fruit juices and tomatoes if left too long in a can exposed to the air tend to act on the metal of the can and may become displeasing to taste but harmless;**

(3) **No harm is done if rust forms on outside of cans unless the can begins to leak;**

(4) **Contents of dented cans are safe to use unless can has been damaged to cause a leak;**

(5) **Bulging cans ARE an indication of spoilage and should be returned to the grocer;**

(6) **If by chance, you freeze a can of fruit while chilling in the freezing unit it does not lessen its nutritive value but may change the appearance.**



NATIONS' SHOW WINDOW

Attractive C.N.E. Lighting Will Feature Panorama Of International Achievement

SHOW window of nations very aptly describes Toronto's Canadian National Exhibition, which this year gets underway on August 25 and runs through to September 9.

Once more, the Ex. promises an enlightening insight into new advances and techniques in the fields of science, industry, agriculture and art. Keeping pace with this panorama of national and international achievement, the attractive lighting, including brightly colored pylons, water fall effects, the flashing dome of the Women's Building and, of course, the 282 specially designed flood lights for the Grand Stand spectacle, will endow the grounds with all the animation and beauty of a fairyland setting.

In order to provide for the additional power requirements this year, primary distribution voltage was stepped up from 2,400 to 4,160, which now gives a feeder capacity of 17,000 kva. This change, effected after months of careful preparation by the Toronto Hydro-Electric System in conjunction with the C.N.E. Electrical Department, was completed in less than a week.

Back of the steadily increasing popularity of Canada's world-renowned Exhibition are long months of careful planning and a flare for showmanship. Elwood Hughes, the genial, quiet but fast-thinking General Manager, has frequently been acclaimed as one of the world's greatest showmen.

With the help of C.N.E. officials, *Hydro News* was able to brush up on a few well-known but often forgotten facts about the C.N.E. which is enjoyed by old and young. Here are some of these facts. The Ex. is now 71 years old. The grounds embrace an area of 350 acres and extend for over a mile and a half along the shore of Lake Ontario in Toronto's west end. And, incidentally, buildings, land and equipment are valued at $40,000,000.

by

Grace J. Carter
News Editor

As explained, the C.N.E. offers something for every member of the family with its electrical displays featuring electronics; new industrial developmenrs; fashions and household science: an outstanding collection of art; the bluebloods of livestock competing for prizes; an internationally famous horse show; sporting events including swimming, power boat races, track and field events, aeronautical manoeuvers; world-renowned bands performing in the well known Bandshell; displays of bizarre products from all over the world; a midway with rides, games and shows for the "kids", both big and small; and last but not least a grandstand extravaganza on one of the most modern outdoor stages on the North American continent. The grandstand, completed only two years ago, can accommodate over 22,000 people.

It is expected that some 2,000 exhibitors from practically all over the world will display their merchandise at the 1950 Fair.

This year the C.N.E. is to be officially opened on August 25 by Canada's Prime Minister, Louis St. Laurent. He is to be accompanied by Mrs. St. Laurent, who will officially open the Women's

Continued on Page

Lighter Lines



"May I go home? I'm worried about my mother—this is the first time I've left her alone."

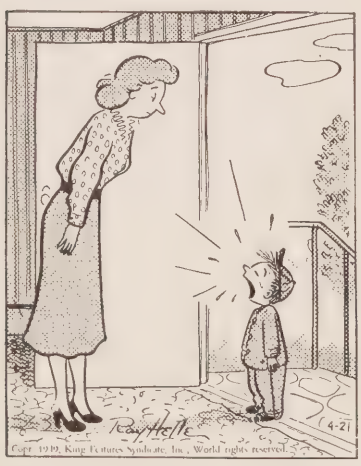
The dear old lady presented a cheque at the local bank and asked to have it cashed. The teller couldn't make her understand what endorsing meant, so finally he said: "Just sign your name on the back as if you were signing a letter."

The old lady trotted across to the desk, and a few moments later returned triumphantly. Across the back of the cheque the teller read: "With love from Aunt Teenie."

* * *

"Doctor," inquired the nervous patient about to go under ether, "how long will it be till I know anything?"

"My dear sir," replied the exasperated doctor, "Aren't you expecting a little too much from a bit of ether?"



"I didn't do anything, and he hit me back."

Mother came home from shopping one day to find Grandpa intently peering into the window of the Bendix. He turned to her with a troubled air and and said, "I can't figure out what's the matter with this thing. It don't seem to be working right."

"Don't be silly, Grandpa," said Mother. "Your glasses and the television set are in the living-room."

* * *

Guide: This castle has stood for 300 years. Not a stone has been touched, nothing altered, nothing repaired or replaced.

Tourist: They must have the same landlord as I've got.

* * *

A man went to a physician, complaining of prolonged headaches. After an examination, the doctor told him to stop smoking.

"I've never smoked," said the man.

"Well, then, you'd better cut out drinking."

"I am a total abstainer."

"Late hours, then, and fast women."

"I am always in bed by nine. I am a bachelor and live with my old maiden aunt. Now, seriously, what causes my headaches?"

"I don't know," said the doctor, baffled, "unless your halo's pinching."

* * *

Diner: There's a button in my soup.

Waiter (ex-printer): Typographical error, sir. Should be mutton.

* * *

Mary was being trained in her duties as a maid. The first time she answered the phone she brought no message.

"Who was it?" asked her mistress.

"Tweren't nobody, ma'am. Jes a man sez, 'It's a long distance from New York' and I sez 'Yessir, it sho' is!'"

* * *

"A woman fell overboard from this ship yesterday, and a shark came up, looked her over, and went away."

"Didn't touch her?"

"Nope. He was a man-eating shark."

* * *

Just as the butcher was about to serve a customer, another woman rushed up and said "Give me a pound of cat-meat, quick!" Then turning to the first woman, she said, "You don't mind my being served first, do you?"

"Why no," answered the first customer. "Not if you're as hungry as all that."



"The operation was a success. I didn't cut myself once!"

A Frenchman, struggling with the English language, turned to a Canadian friend for counsel.

"What," he asked, "is a polar bear?"

"Oh," replied the friend, "he lives way up north."

"Yes, but what do he do?"

"Sits on a cake of ice and eats fish."

"Zat settles it!" said Pierre, "I will not accept."

"Accept? What do you mean?"

"Ah," he explained, "I was invite to be a polar bear at a funeral, and I will not accept."

* * *

Man: Watcha cryin' for?
Boy: I lost a nickel.
Man: Where?
Boy: In Virginia.
Man: How come?
Boy: She swallowed it.



"You DRANK your tea leaves!"

Municipal Officials at Opening Ceremonies

MANY well-known Mayors and Reeves were seen in attendance at the opening of Des Joachims. Among those who were identified by *Hydro News* are the following:

MAYORS

W. S. (Bill) Beaton, Sudbury; J. J. Carmody, Pembroke; William (Billy) Henley, Picton; J. Mel Moffat, Galt; W. N. Moore, Port Hope; John T. Moran, Renfrew; T. M. Palmer, North Bay; John Pennett, Perth; William G. T. (Bill) Prime, Carleton Place; A. Valois, Mattawa; H. W. Vine, Napanee.

REEVES

William G. Beech, York Twp.; Nelson A. Boylen, North York Twp.; F. H. Broder, Morrisburg; Hugh Costello, Brudenell; L. C. Davis, Iroquis; G. Frank Dodge, Cardinal; D. A. Francouer, Head; G. E. Gomme, Almonte; H. L. Landon, Barry's Bay; Henry M. Leech, Stafford Twp.; K. B. McGregor, Cobden; A. A. McNab, Renfrew; G. W. Moffatt, Winchester; Gordon Monroe, Stamford Twp.; O. E. Rothwell, Lanark; Leonard Wookey, Callander. A group picture including many of these gentlemen is featured among the pictures of the official opening of Des Joachims.

Hydro Engineers Lauded

Hydro engineers are pre-eminent on the North American Continent in the art of hydraulic engineering. This opinion was expressed by Robert Butter of Owen Sound, President of the Association of Municipal Electrical Utilities, at the official opening of the Pine Portage development. Another prominent municipal Hydro official in attendance, D. P. Cliff of Dundas, President of the Ontario Municipal Electric Association, joined in acclaiming the outstanding achievement represented by the progress of Hydro's postwar program. Others in attendance at the Pine Portage opening included Mayors F. O. Robinson of Port Arthur and H. Badani of Fort William and Charles Cox, M.L.A., Port Arthur.

SHOW WINDOW

(Continued from page 29

Building and the "Canadian Design For Living," in the West Annex of the Coliseum.

It is interesting to note that last year an "Electrical Day" was added to the program. This was the result of a suggestion made by Hydro Chairman Robert H. Saunders, and this particular day is now known as "Automotive and Electrical Day."

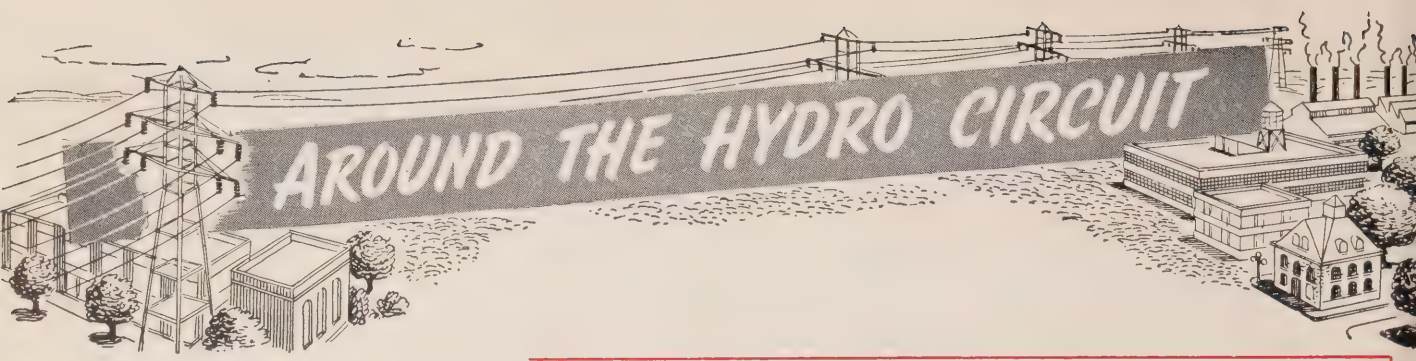
Of special interest to music lovers each year is the featured band. This year it will be the world famous United States Air Force Band with an aggregation of 110 outstanding musicians.

Practically every year an attendance record is established, and last year was no exception, a new high of 2,650,500 having been recorded.

Preston Operator Presented With Bronze Medal



BRONZE MEDAL and accompanying certificate, awarded by the National Safety Council, Chicago, are presented to Edward Gambling (left), First Operator, Preston Water and Light Commission, by Wills Maclachlan (right), Secretary-Treasurer and Engineer, Electrical Employers' Association. Last September Mr. Gambling saved the life of Lynn Toman (center), then 16 months old, by the use of artificial respiration after she had nearly drowned in a tub of rainwater. Also present at the presentation, held at a private dinner arranged by the Commission, were W. B. Denyes, (third from left) Chairman of the Preston Water and Light Commission, and the grateful parents, Mr. and Mrs. Reuben Toman.



Expand Facilities In Chatham District

CAPACITY of Hydro transformation facilities in Chatham and Kent Counties will be increased from 15,000 kva to 29,000 kva when these areas are changed over to 60 cycles. In addition transmission and distribution facilities will be considerably increased, it has been announced. Preliminary work has been going on for more than a year on the project including installation of more equipment at Kent Transformer Station near Chatham. Main factor involved in the expansion program at this point is the greater security of service which will be assured as a result of the new installations. Much of the present equipment in the Kent station will be rebuilt and put back in service elsewhere in the Ontario system, it has been pointed out.

PEAK LOAD SHOWS GAIN AT PETERBOROUGH

In an operating report presented to the Peterborough Utilities Commission recently, General Manager Ross L. Dobbin drew attention to the fact that the peak load increased nine per cent in April, 1950, over the same month last year. During the same period the kilowatthour consumption increased 12 per cent. In 1950 the peak load was 24,924 horsepower as compared to 22,900 in 1949, an increase of 2,024 horsepower.

Appreciation

APPRECIATION of the courtesy and adaptability of Hydro crews engaged in rebuilding the municipal distribution system in Burks Falls was expressed in a recent item in the Huntsville "Forester."

The item read as follows:

"We would like to pay tribute to a phase of the Hydro installation here that has not been mentioned previously, and that is to the men who have actually done the work. Engineers, foremen, linemen and ground workers have all fitted into the community life in a most acceptable manner. They have been most courteous in their dealings with the public and have performed their duties in a most efficient and painstaking manner. While the organized gang has been largely depleted as the local work is drawing to a close, those who are still with us appear loath to leave and we can truly say we are loath to see them go. Many of these men will be welcome in the homes here for a long time to come."

DIESEL UNITS GO TO WINDSOR STATION

Dismantling of two 500-kilowatt diesel generating units at Hamilton Emergency G.S. was begun recently, the Commission has announced.

The two units will be installed at the J. Clark Keith Generating Station, now being erected at Windsor. No longer required for system power, they will be used to supply power for construction, it was pointed out.

NEW ENGINEER AT WOODSTOCK

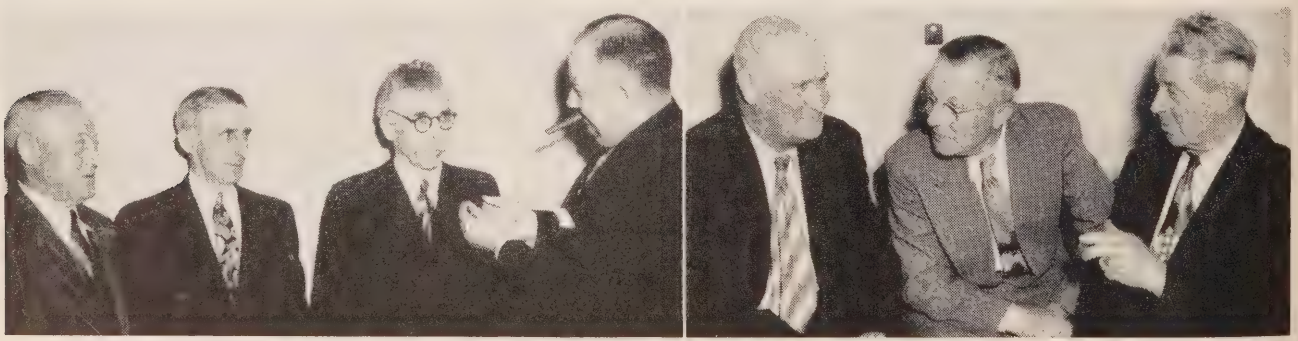
Glen Sanderson, Toronto, a graduate of the University of Toronto, was appointed junior engineer on the staff of Woodstock Public Utilities Commission recently.

LOAD GROWTH IN TORONTO

Operations of the Toronto Hydro-Electric System for 1949 resulted in a gross operating income of $16,044,453, it was announced recently. Growth of the system was reflected in the power sales total, which was 1,698,489,677 kilowatthours for 1949, compared with 1,116,895,495 for 1939. In the same period the annual peak load rose from 383,536 to 463,164 horsepower.

EXTEND HYDRO SERVICE IN COCHRANE R.O.A.

Steady progress is being made in extending Hydro service in the Cochrane Rural Operating Area this year with approximately 843 rural consumers receiving service to date.



WITH A COMBINED SERVICE RECORD of 305 years, ten members of the Chatham Hydro Quarter Century Club were honored by their associates during a recent social evening. The guests of honor, Bert Tugwell (with 36 years' service); Fred A. Clark, 31 years; W. C. Killby, 31 years; Jack Jones, 31 years; R. R. Wood, 30 years; George Cook, 30 years; Frank McKinshine, 30 years; H. M. Burke, 28 years, and W. C. Moore, 28 years, received merit pins. Photo, left, shows P.U.C. Chairman, Stanley Thomson presenting pins to three members of the club.

U.S. RATIFIES NIAGARA TREATY

JUST as this issue of Hydro News was going to press, word was received from Washington that the U.S. Senate had ratified the treaty with Canada to divert additional water from the Niagara River for the purpose of increasing the production of hydro-electric power in Ontario and the State of New York. This action of the Senate, Commission Chairman Robert H. Saunders stated, would permit Ontario Hydro to proceed with its plans for building two new plants in the Queenston area which will increase the output from the Niagara River by between 800,000 and 900,000 horsepower within five or six years.

Mr. Saunders also expressed his warm appreciation for the splendid co-operation received from Premier Leslie M. Frost of Ontario, Hon. Lester Pearson, Minister of External Affairs, His Excellency Hume Wrong, Canadian Ambassador to Washington, and their efficient staffs during the period of negotiations which preceded ratification of the treaty.

The treaty, ratified by the Canadian Parliament on June 14 this year, provides for an equal division of the resources of the river between Canada and the United States. All Canadian rights in the Niagara River were formally transferred to Ontario on March 27, 1950, by an agreement signed by Prime Minister St. Laurent and Premier Frost. Protection of the scenic beauty of Niagara Falls is assured by the limit on the amount of water to be diverted.

NEW LAMP FRESHENS AIR

HAVING trouble with refrigerator odors? A well-known manufacturer of electric lamps and appliances has come up with a new lamp that may solve your problem. It's a small (overall length, 2 5/16″; maximum width, 1⅜″) 4-watt bulb which gives off tiny amounts of ozone, a form of oxygen. This has the effect of neutralizing, or "masking", odors in spaces up to 1,000 cubic feet.

Besides its use in refrigerators, clothes closets, elevators, automatic clothes dryers, and many other locations, the manufacturer recommends it for small sanitary storage cabinets, such as cabinets for medical and dental instruments, because of its mild germicidal effect. On the market since last January, the ozone-producing lamp is available in Canada and the United States.

STANDARDIZE FREQUENCY IN COMOX VALLEY, B.C.

BRITISH COLUMBIA Power Commission recently announced plans for standardizing Comox Valley electrical power with other Vancouver Island power at a cost of approximately $680,000. Change-over, like the Ontario program, will be from 25 to 60 cycle.

Change-over costs include $250,000 for construction of a transmission substation, $230,000 for other substations, and $200,000 for change-over of household and commercial equipment and appliances.

O.M.E.A. DISTRICT MEETINGS

District meetings of the Ontario Municipal Electric Association are scheduled to be held on the following dates:

September 7 and 8:	Georgian Bay	District No. 2 at North Bay;
September 11 and 12:	Northern	District No. 3 at Kenora;
September 20 and 21:	Eastern	District No. 1 at Brockville;
September 27:	Northwestern	District No. 6 at Guelph.

Monthly Load Summary

JUNE, 1950

IMPORTANCE of Ontario Hydro's 480,000 horsepower Des Joachims development on the Ottawa River to electrical consumers throughout Southern Ontario is stressed by the Commission's load summary for June. Primary power demands on the Southern Ontario System last month reached an all-time record of 2,017,201 kilowatts, representing a 10.4 percent increase over the figures for June, 1949. Despite this increased demand for power, Chairman Robert H. Saunders, at the opening of Des Joachims on June 28, was able to announce the suspending of all restrictions on lighting and space-heating in the southern areas of the province primarily because Des Joachims is providing an initial supply of 120,000 horsepower. Additional units will be placed in service progressively during the next few months. The plant is scheduled to reach its full capacity of 480,000 horsepower early next year. In addition, it is expected that the 160,000-horsepower Chenaux development, located on the Ottawa River about 75 miles downstream from Des Joachims will also be in service, with initial deliveries this December.

In the Thunder Bay System there was a primary power demand in June of 168,233 kilowatts, an increase of 8.6 percent over the corresponding month of last year. The new 80,000 horsepower Pine Portage generating station on the Nipigon River, opened on June 21, is helping to meet the increasing electrical demand in this Lakehead district.

In the Northern Ontario Properties, which the Commission controls and operates on behalf of the Provincial Government, the increase in primary power demand this June over last was 13.6 percent, with 229,721 kilowatts for June, 1950 as against 202,300 kilowatts for June, 1949. Additional power supplies to meet the increasing demands of this thriving district are now available from the 56,500 horsepower Tunnel Generating Station on the Mississagi River, opened June 14.

The June load summary, tabulated in kilowatts, follows:

	Maximum 20-minute peak Kw.		Percent
	June, 1950	June, 1949	Increase
PRIMARY DEMANDS			
(Actual Loads Plus Cuts)			
Southern Ontario System	2,017,201	1,827,530	+10.4
Thunder Bay System	168,233	154,924	+ 8.6
Northern Ontario Properties	229,721	202,300	+13.6
TOTAL GENERATED AND PURCHASED			
Southern Ontario System	1,867,806	1,737,485	+ 7.5
Thunder Bay System	168,433	168,424	+ 0
Northern Ontario Properties	237,341	142,040	— 1.9


STEWARTVILLE
DeCEW
AGUASABON
EAR FALLS

HYDRO News



SEPTEMBER 1950 NUMBER 9

SAVE ELECTRICITY!

MAINTAIN PEAK PRODUCTION AND FULL EMPLOYMENT

The production of essential war materials to support the United Nations' fighting forces is reflected in increased activity by Ontario's industries, resulting in a sharp upswing in the use of power which has been particularly evident in the past few weeks. In Southern Ontario on September 14th, the demand for primary energy reached an all-time high of 40,933,035 kilowatt-hours, exceeding that of the corresponding day a year ago by 6,614,900 kilowatt-hours, very severely taxing available resources.

The current rate of growth is both unseasonal and unprecendented and reflects the tremendous industrial development within the province; the increase in population; and the greater demands for electricity as a result of the high rate of new home construction.

Hydro's record-breaking expansion program has already added more than 600,000 horsepower to Ontario's power supply. By early in 1951, this will be progressively increased by 300,000 horsepower. Additions during the balance of 1951 and in 1952 will provide a further 720,000 horsepower. However, even with the accelerated program to bring in new resources, the rate of growth in power demands indicates that it is necessary to avoid all waste in the use of electricity.

We urge all consumers to save power in every way possible. Please turn off lights and other electrical equipment when not required. Every kilowatt-hour that is saved will help our industries to maintain maximum production of essential materials.

R. H. Hearn
General Manager

Robert H. Saunders
Chairman

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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COVER PHOTOS

IN a beautiful setting of wooded hills, Hydro's La Cave development on the Ottawa River is making satisfactory progress as this month's front cover photograph clearly shows. This photograph, as well as the illustration on the back cover, was recorded by Hydro Staff Photographer, E. A. Johnston during a recent trip to Eastern Ontario.

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September, 1950

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AUTUMN SHADOWS

A Sensitive Barometer

POWER demands, recognized as a sensitive barometer of industrial growth and prosperity at home, are also an indication of the trend of international conditions.

This fact has been brought into sharp focus by the sudden and dramatic upsurge in demands in recent weeks. The vigorous impact made upon industry in Ontario reflects, among other things, the accelerated production of essential war materials for the United Nations' forces.

Only last June when the Commission opened three new power plants — Tunnel, Pine Portage and Des Joachims — indications pointed to an adequate supply of power being available to meet all anticipated demands this fall and winter. That picture has changed within a matter of weeks, despite the fact that Hydro's all-out expansion program has already added something like 600,000 horsepower to the power resources of this province, and will add another 1,000,000 horsepower progressively over the next two years. Indeed, power requirements are pyramiding at such a rate that Hydro Chairman Robert H. Saunders has found it necessary to warn all consumers of electricity, particularly in Southern Ontario, that every effort must be exerted to save power in order that essential production and employment may be maintained at maximum levels.

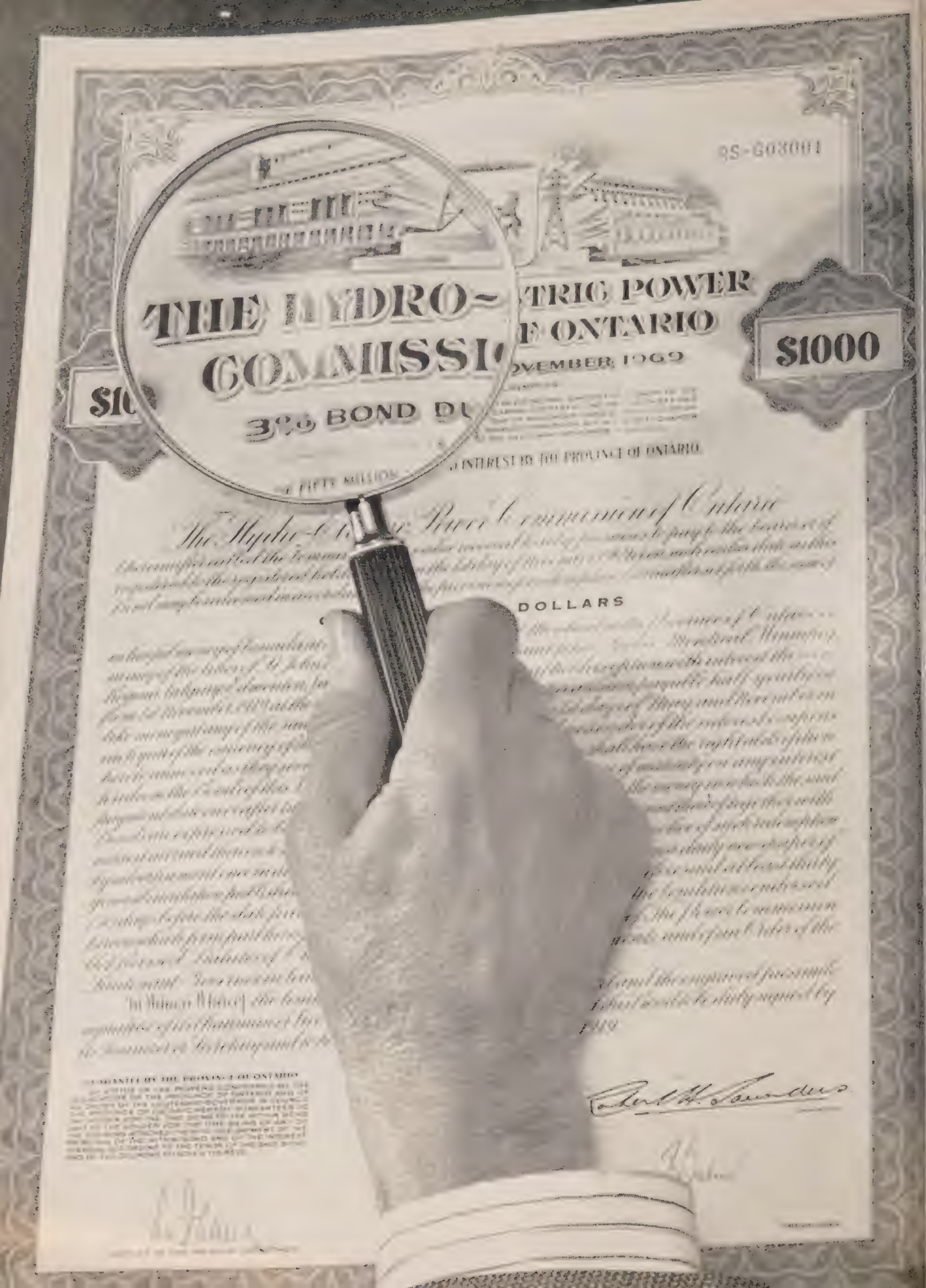
The present situation is without precedent in the annals of Hydro. For example, as Mr. Saunders has pointed out, in the Niagara area alone where there is a heavy concentration of industry there was a very sharp increase of 1,400,000 kilowatthours a day during the second two weeks in August as compared with the first two weeks. At the same time, the daily energy demand in this area was 2,000,000 kilowatthours in excess of the figure for the corresponding period a year ago. In other words, the Commission was suddenly called upon in the month of August to meet demands that might be expected only in the dark months of winter when loads are usually the heaviest. Generally, that upward trend has been continuing with new all-time highs being established one day only to be completely eclipsed the next.

While greatly accelerated industrial production is a major cause of the transition which has taken place, there are many other contributing factors. There is, of course, the normal expansion of industry. In Ontario at present there are something like 12,000 manufacturing concerns. Then there is the tremendous home building program. In 1948, new homes totalled 26,391 and last year an additional 31,440 were built. This year, that program is still being maintained at a high level. New homes, built for modern living, have to be equipped with electric ranges, refrigerators and many other electrical appliances. Taking 70,000 as the approximate estimate of the number of new homes built in Ontario from 1948 to date, it can be readily appreciated that domestic consumption of electricity alone is an important factor in relation to overall power demands, especially in view of the greatly increased number of people who have taken up residence here and who are now using power. In the past two years, Ontario's population has increased by 200,000 and is now over the 4,500,000 mark.

At the same time, Hydro has been ever mindful of the needs of the farmer. This fact is clearly indicated by statistics which tell of the tremendous expansion in rural service. At the end of the last war in 1945, there were 156,560 rural customers in Ontario receiving service over 21,569 miles of rural line. The maximum average peak rural load in that year was 132,572 horsepower and the average farm consumption 183 kilowatthours. In the brief space of five years, there has been a dramatic change in that picture. Between the end of 1945 and the end of July of this year, 122,440 new rural customers had been added, making a total of 279,000 who are now receiving service. Construction of 12,119 miles of new rural line in the same period brings that total up to 33,688 as of the end of July. Latest available figures on the maximum average peak rural load show that between 1945 and 1949 it had more than doubled, having increased by 138,303 horsepower to a total of 270,875 horsepower. The average farm consumption between 1945 and 1949 had advanced by 60 kilowatthours to a total of 243 kilowatthours.

These facts reflect the tremendous overall expansion which is taking place in this province — an expansion for which Hydro's highly accelerated construction program was designed to provide. And, under normal conditions, all anticipated requirements would likely have been met with some power in reserve. However, the troubled international situation has cast its shadow across Ontario and it goes without saying that the people of Canada and of this province must stand shoulder to shoulder with the peoples of other truly democratic countries in meeting the dangers of the hour with vigor and determination.

At this time, the people of Ontario are in a position to render a most effective and worthwhile public and national service by seeing to it — individually and collectively — that no power is wasted. The solution is in their hands: just snapping off a switch when electricity is not required.


THE HYDRO-
COMMISSI
3¾% BOND DU
$1000
$10
DOLLARS

GOOD SECURITY

Hydro News' Writer Accorded Privilege Of Touring Plant Where Hydro Bonds Are Designed, Engraved and Printed

by Harry M. Blake
Hydro News

HYDRO bonds are valuable securities! Like all high grade negotiable documents, great care is taken to protect them against the thief and the counterfeiter. Protection against counterfeiting is provided through the exercise of special skills and the taking of special precautions in designing, engraving and printing. When, after signing and sealing, the checked and counted coupon-bearing bonds are ready for purchase by the public, a practically impenetrable barrier has been set up—if not against theft itself, certainly against the chance of successful conversion or marketing by any individual other than the bona fide bearer.

The preparation of Hydro bonds is a work of incomparable craftsmanship. It is carried out by one or other of the only two firms in Canada established in this particular branch of the graphic arts industry. Located at Ottawa, these are the British American Bank Note Company Limited and the Canadian Bank Note Company Limited. They bid by tender on Hydro jobs. During a recent visit to Canada's capital, *Hydro News* was invited to see the definitive bonds for a $50,000,000 Hydro bond issue put through at the new premises of the British American Bank Note Company on Gladstone Avenue.

The Building, providing 90,000 square feet of floor space, is located on sloping ground and covers an entire city block. Executive and business offices and the highly confidential engraving and plate transfer departments are located on the upper or street level where red face brick, limestone and aluminum sash have been combined to form an effective functional facade. Since the control of traffic to and from a plant like this is of the utmost importance, the details of the design at both the office and the employees' entrance have called for special attention. In the office lobby security requirements have been met by the installation of a simple, modern aluminum grille, patterned in squares and diagonals. The employees' entrance is situated in a compact extension along one side of the building. A stairway leads down to wide corridors traversing the plant and traffic to and from each department is closely supervised.

Hydro Power For Hydro Bonds

Electricity supplied by the Ottawa Hydro-Electric Commission plays an important role in the interior arrangements. Operations and controls require maximum loads of 960 horsepower. There are 275 motors in use. The plant proper is laid out to permit the complete elimination of columns, and surface-mounted fluorescent lighting units installed in continuous rows, 10 feet apart, maintain a general illumination of 50 foot-candles. The type of work upon which the firm is engaged necessitates close adherence to a temperature of 72 degrees Fahrenheit, with the humidity kept at about 50°. These conditions are maintained by means of an electrically-controlled conditioning system, requiring a load of 300 horsepower. Fan rooms and conditioning chambers serving the production departments are located in trusses directly above the working floor and are served by centrifugal refrigerating compressors of 350 tons aggregate capacity located in the boiler room. A separate conditioning unit, installed directly above the plant entrance in a mezzanine penthouse, serves the offices, the engraving department and the employee service area.

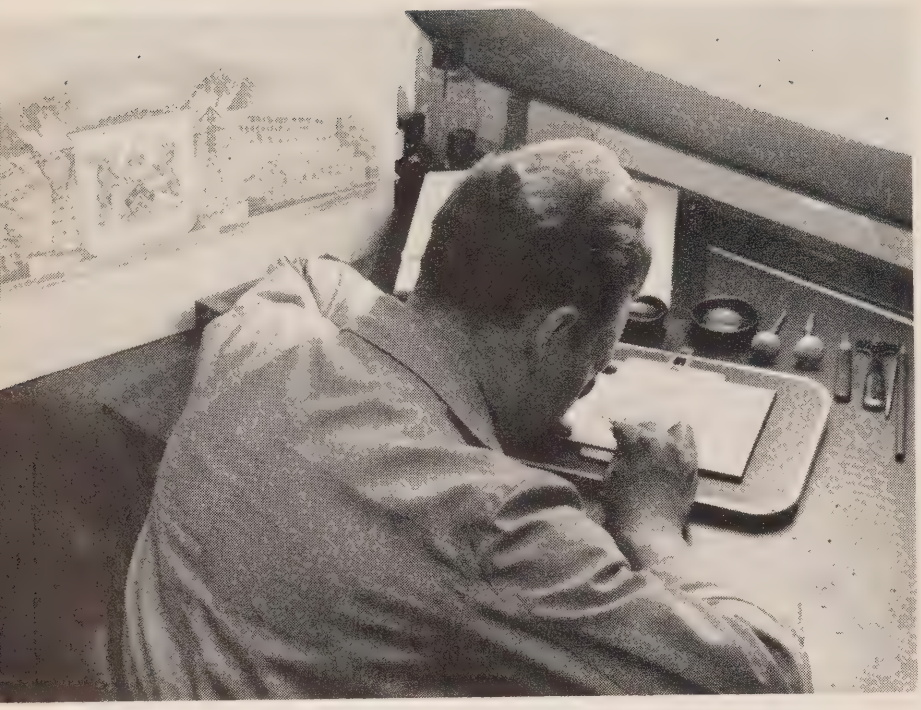
Through the courtesy of the company, represented by the Secretary, Archie E. Grier, the *Hydro News* party was accorded the rare privilege of a complete tour of the plant. For this interesting itinerary Plant Manager R. P. White and Production Supervisor K. A. Cowan kindly offered their services as guides.

Work on the Hydro bonds proved to be only one of several major activities upon which the company was engaged. In the printing department, supervised by the foreman whose office is situated on a strategically located dais, a continual flow of multi-coloured mining and industrial stock certificates was passing over the presses.

Millions of dollars in Canadian currency were in various stages of manufacture and the apparent indifference of the operators to the potential value of the product being handled was quite a shock to one's preconceived ideas of a security system.

"Everybody expects the place to be full of Mounties and private detectives. That is altogether unnecessary. The number of notes must balance after every operation. Anyway, those bank notes are not worth a penny until they are signed, and that is done after they have passed out of our custody and been accepted by the Bank of Canada," Mr. Cowan said. "To get back to Hydro bonds, what we do first is to make up a model design for the bond and coupons. This is submitted to your people for their approval. If the design is accepted, then we have to engrave the 'bond story' as we call it together with the necessary titles and wording."

We went on to the engraving depart



WORKING ON a vignette for a Hydro bond. Security begins right here. Not even the artist himself could exactly duplicate the detail and shading in the original drawing.

★ ★ ★

STEEL PLATES used for the engraving of Hydro certificates are hardened and then chromium-plated to prevent wear by being dipped in a molten bath at a temperature of over 1500°F.



ment where the artists and engravers were working. This is where the "making" of the bond starts with the preparation of the vignette. First the original drawing. Then the transfer of the photographic reduction to the steel plate. Finally the engraving—an etching and cutting job requiring delicate workmanship and the most meticulous care.

Security accompanies the work from the very beginning. It is inherent in the original work of the artists.

"Photography can be reproduced perfectly," commented Mr. White. "But no two artists can execute a drawing or vignette in exactly the same way. Even the same person wouldn't do it just the same twice."

Further along, another artist was working on coupon lettering. His were the sensitive features and delicate touch of the master craftsman. He had been with the company since 1910. An apprentice engraver in 1898!

The plate from which bank notes or bonds are made is not, Mr. White explained, the work of one man. After each engraver completes the work assigned to him, individual impressions are transferred to a master die—all in their proper place—until the entire impression is complete. Since each engraver is a master at his own particular type of work, the finished plate represents the very finest example of the engraver's art. It is far beyond the ability of the counterfeiter to reproduce it with preciseness and unerring accuracy.

On past the artists' benches to where skilled machine craftsmen were engaged in siderography. This is a process of multiplying facsimiles of the engraved steel die so as to save time in subsequent printing operations. The plates used for engraving are hardened and then chromium-plated to prevent wear at a temperature of over 1,500 degrees Fahrenheit.

Bonds Take Half Ton Of Ink

The printing of the bonds is done on special machines with special bond paper. Sometimes the paper is impregnated with colored discs called **planchettes.** Many other special security devices are also employed.

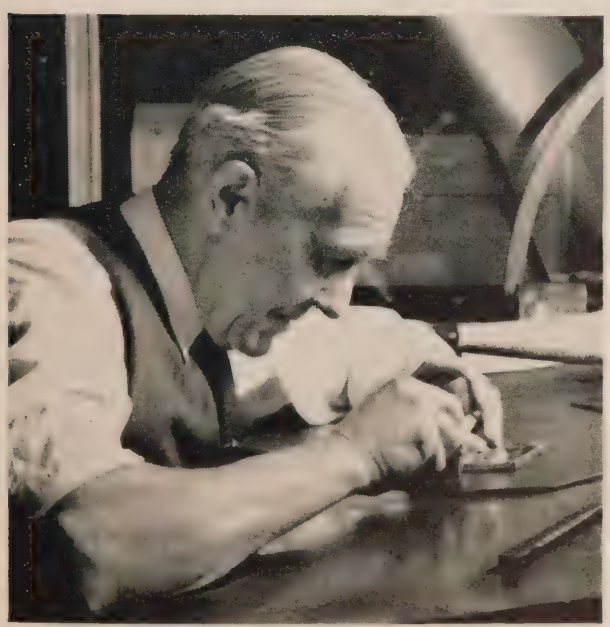
About a ton of ink a day is made on the premises by the British American Bank Note Company. A wide variety of colors is used for the printing of currency and for the different bonds, stock certificates and debentures. Approximately 1,100 pounds of ink, or more than half a ton, are used in the printing of a $50,000,000 Hydro bond issue.

After the coupon-bearing bonds have been passed over the presses, they are examined for imperfections in printing. The bonds are numbered face and back and are then final-examined, and any



PREPARING AN engraved steel plate for the printing of a Hydro bond requires skill and experience. This craftsman is engaged in a branch of the graphic art known as siderography. It is concerned with the preparation of steel printing plates from engraved master dies.

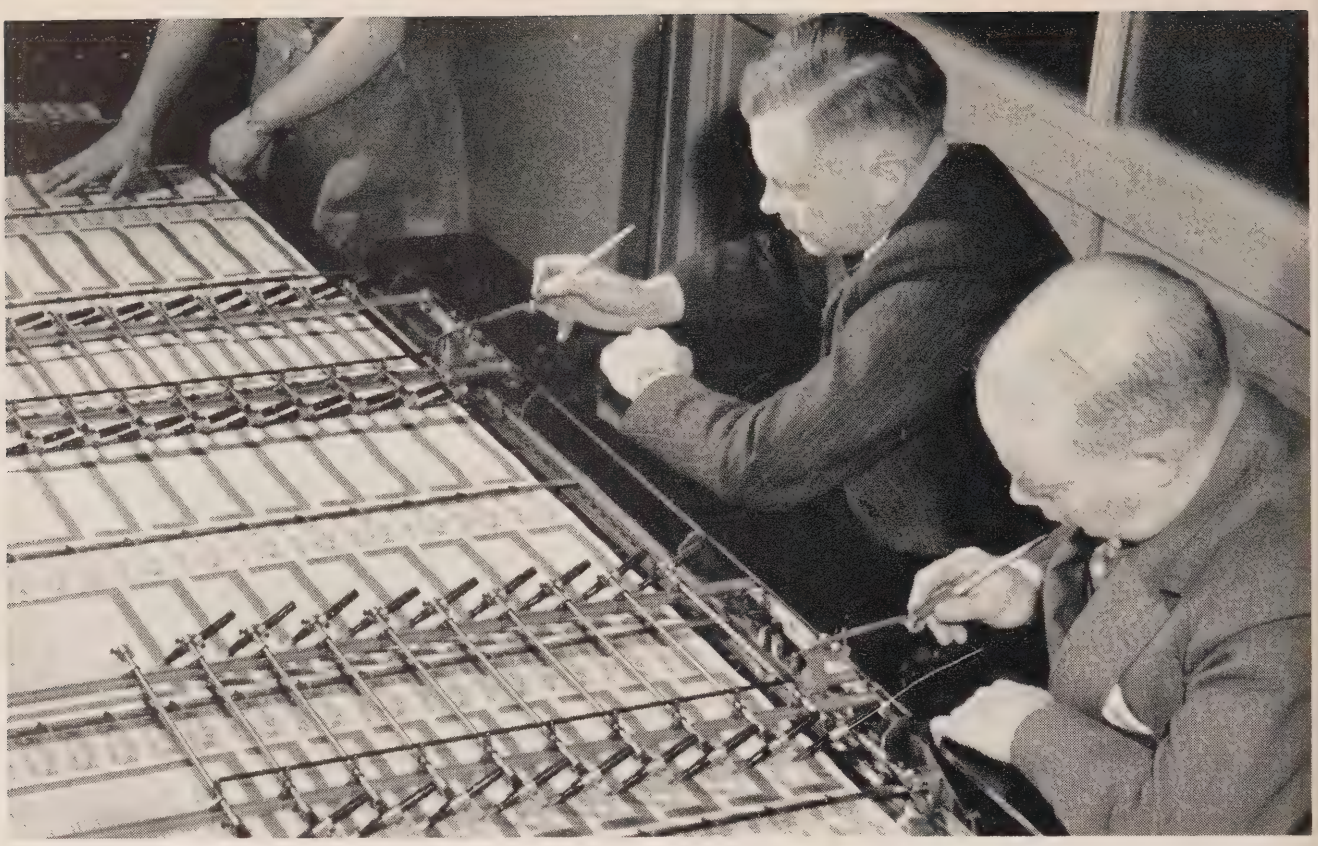
★ ★ ★



A SENSITIVE and delicate touch proclaims the master craftsman. H. E. Lloyd's apprenticeship dates back to 1898.

HYDRO BONDS are being loaded in steel clamping strips for signing.





EACH USING eighteen pens simultaneously and operating at the rate of 10,000 signatures an hour, Hydro's Treasurer, F. R. Brebner and A. W. Davies of the Ontario Government's Treasury Department are signing the coupon bearer bonds for a recent Hydro $50,000,000 bond issue.

imperfect sheets removed and replaced. All work spoiled in printing is destroyed under double custody--that is in the presence of two persons.

This Hydro bond issue of $50,000,000 comprised 53,000 bonds in various denominations. Allowing for spoilage, actually 58,300 sheets were printed. Counting the numbers on face and back, this involved 300,000 impressions.

Signing The Bonds

No bonds are complete until they are signed and sealed. Hydro bonds are printed with the engraved signature of the Chairman. In addition, they must be signed by the Treasurer of The Hydro-Electric Power Commission of Ontario and an officer of the Treasury Department of the Province of Ontario, which guarantees the bonds. These officers proceed to Ottawa when they are notified that the bonds have been printed and are ready for their signatures.

The signing of the bonds adds another element of security to the precautions already taken. Equipment for the signing of the Hydro bonds consists of a machine with movable racks to hold the bonds and a cradle fitted with ball bearings and fine gears and mounted with 20 fountain pens. The pens are operated all at the same time through the movement of the master pen in the hand of the signer. Experienced signers can operate at the rate of 10,000 signatures an hour.

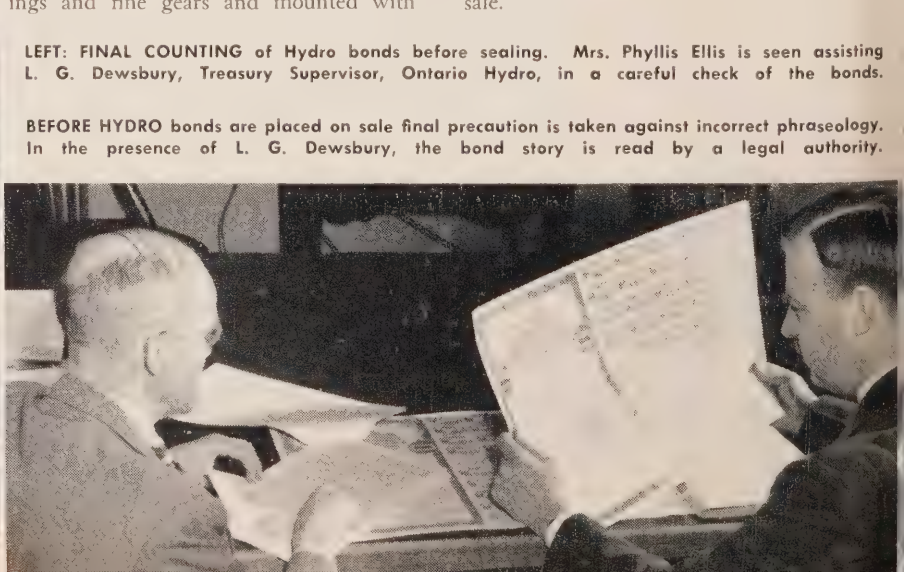
Final Dispositions

On arrival at Hydro headquarters in Toronto, the signatures are checked and the bonds sealed and counted. Then, as a last precaution, the "bond story" to which reference has previously been made is read by a competent legal authority. The bonds are now ready for authorized sale.



LEFT: FINAL COUNTING of Hydro bonds before sealing. Mrs. Phyllis Ellis is seen assisting L. G. Dewsbury, Treasury Supervisor, Ontario Hydro, in a careful check of the bonds.

BEFORE HYDRO bonds are placed on sale final precaution is taken against incorrect phraseology. In the presence of L. G. Dewsbury, the bond story is read by a legal authority.



Honor Sir Adam

Commission's Queenston Plant Will Be Permanent Memorial to "Father of Hydro"

HYDRO'S largest and world-famous Queenston plant near Niagara Falls has been renamed the "Sir Adam Beck-Niagara Generating Plant No. 1" as a permanent memorial to "The Father of Hydro."

This announcement was made by Hydro Chairman Robert H. Saunders when representatives of the City of Toronto and Toronto Hydro joined with Ontario Hydro at a special memorial ceremony marking the 25th anniversary of the death of Sir Adam on August 15 this year. Wreaths were placed on the Beck monument on University Avenue by Mayor Hiram McCallum, Loftus H. Reid, Chairman of Toronto Hydro, and by Mr. Saunders.

"Every day I am with Hydro," said Mr. Saunders, "I realize more and more the tremendous debt we owe to the man whose memory we honor today. My hope is that future generations of Ontario citizens will be reminded of this debt and of the struggles endured that we might have the benefit of low-cost power in abundance. The river that he loved was the Niagara; the plant for which he fought was the great Queenston-Chippawa, largest of its type at the time it was built. This plant was always identified with Sir Adam — it always will be — your Ontario Hydro Commission has decided to change the name to — The Sir Adam Beck-Niagara Generating Plant

(Continued on page 29)

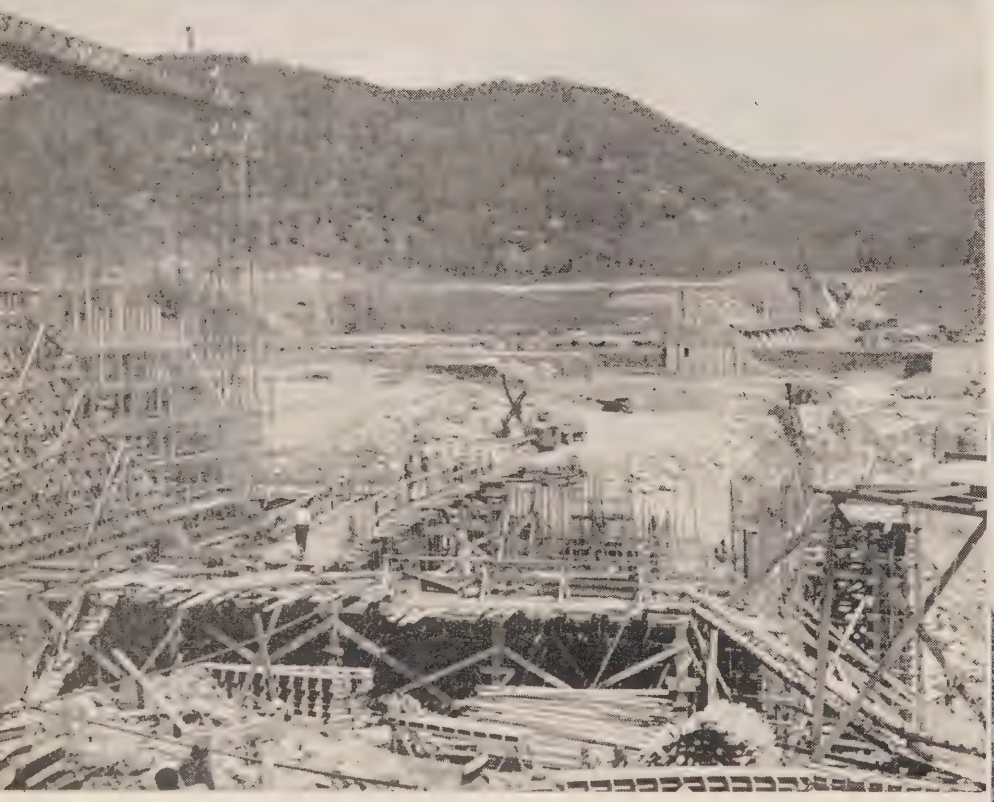


BELOW: City of Toronto, Toronto Hydro and Ontario Hydro officials attend a brief ceremony commemorating the 25th anniversary of the death of the late Sir Adam Beck. During the ceremony, Chairman Robert H. Saunders announced the renaming of the Queenston-Chippawa Generating Station (above) in Sir Adam's honor. Left to right—H. J. MacTavish, Secretary, Toronto Hydro; Controller John Innes; Toronto Hydro Commissioner Bert Merson; Hon. George H. Challies, First Vice-Chairman, Ontario Hydro; Controller D. Balfour; Chairman Saunders; Mayor H. E. McCallum; R. L. Hearn, Gen. Manager and Chief Engineer, Ontario Hydro and Toronto Hydro Chairman Loftus H. Reid.





Report on



by
Edith B. Kent
Hydro News

CONSTRUCTION at the 144,000-kilowatt (192,000-hp.) La Cave development, on the Ottawa River five miles above the town of Mattawa, is progressing rapidly, with the project approximately 25 to 30 percent complete.

Initial delivery of power from La Cave is expected in January, 1952, when the first unit will be placed in service. The remaining five units will come into operation progressively during that year.

With the river now flowing through the completed diversion channel, work is proceeding in the dry at the dam and powerhouse site. Some 790,000 cubic yards of rock were excavated for the diversion channel, which is about 2,500 feet long and varies in width from 360 feet to 434 feet.

By about the end of August, a total of 123,000 cubic yards of concrete, or 48 percent of the total required, had been placed for the main dam. This massive structure will be 2,500 feet long with a maximum height of 130 feet. As in other Hydro developments, it will incorporate the powerhouse, and will include some 1,240 feet of sluiceway. Six 40-foot steel sluicegates and forty-two 16-foot stoplog sluices will regulate the level of the forebay to provide maximum efficiency in the operation of the plant.

Excavation at the powerhouse site was 91 percent complete, some 36,000 cubic yards of rock having been removed. Placing of concrete for the draft tube floors had been commenced, and a small portion of the concrete had been placed for the erection bay section of the powerhouse. For this part of the work, a pump-crete machine is being used.

About 55 percent of all the concrete to



WHITE CONCRETE PIERS rise from the waters of the diversion channel at La Cave (upper photo). Completion of this channel allows work to proceed in the dry at the powerhouse site. Though project has advanced since these photos were taken in July, they show general picture.

OVERALL VIEW of the project is shown in lower photo. Site of the future powerhouse is shown in the foreground, with pipe for pump-creting operations running up ramp. Excavation at this site is 91 per cent complete, with some concrete placed for the erection bay section.

be used for the project is to be pumpcreted, that is, forced through a pipe directly into the formwork. The remainder is placed by means of a conveyor belt, from which it is deposited into the formwork.

Other excavations being carried on included removal of rock from the tailrace channel. Some 68,000 cubic yards, or about 63 percent of the estimated total of 107,000 cubic yards, had been removed from this channel, which will be approximately 2,000 feet long and 425 feet wide.

To give the plant an operating head of 77 feet, the river at the site of the La Cave development will be raised to 583 feet above sea-level, thus creating an artificial lake some 30 miles long and about ½-mile wide, extending upstream to Lake Timiskaming. This will necessitate the clearing of about 3,500 acres of land which will be flooded. By the end of the month, approximately 1,150 acres, or 33 percent of the total, had been cleared.

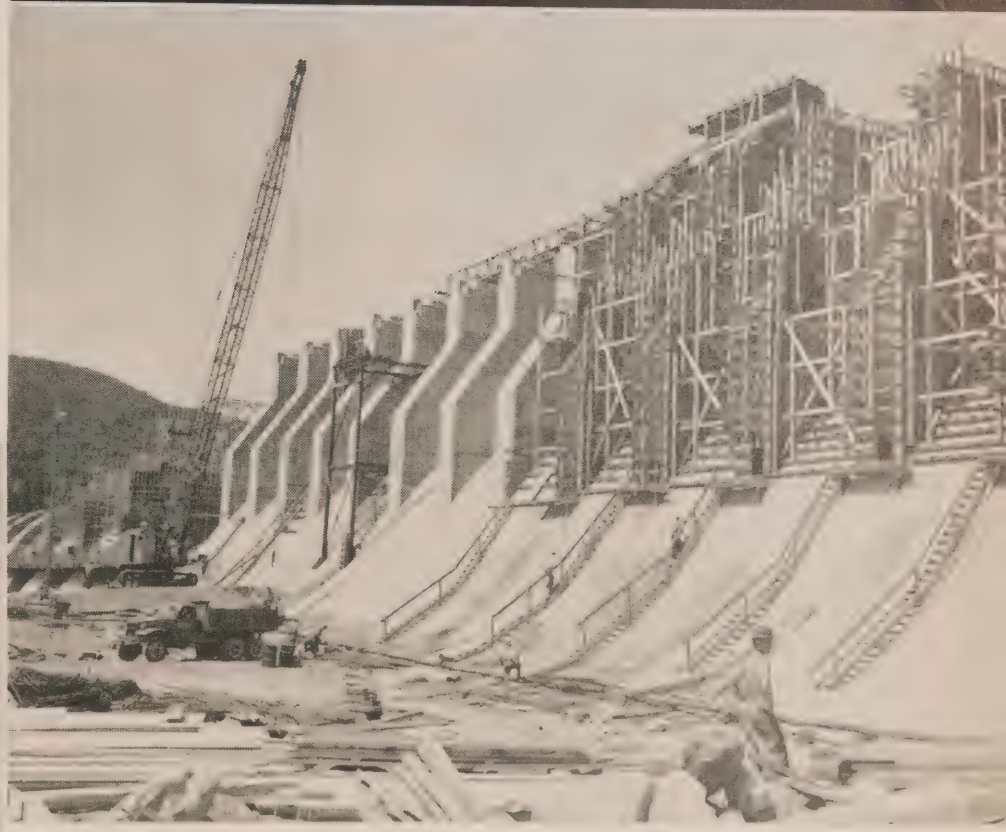
In addition, to provide freer flow of water, work had commenced on certain channel improvements, including dredging the river below the Town of Timiskaming, approximately 30 miles upstream from La Cave. Work was underway for an excavation along the Ontario shore for a distance of about 4,000 feet, extending as much as 200 feet out from the shoreline. It is estimated that removal of 400,000 cubic yards of earth will be necessary at this point.

With 1,600 men employed on the project, construction forces were at their peak, and were expected to continue at this level for several months.

Relocation of 2½ miles of Provincial Highway No. 63 and the diversion of 37 miles of C.P.R. line were being undertaken, with grading for the railway line approximately 39 percent complete. These relocations are made necessary by the fact that the present sites of railway line



LA CAVE



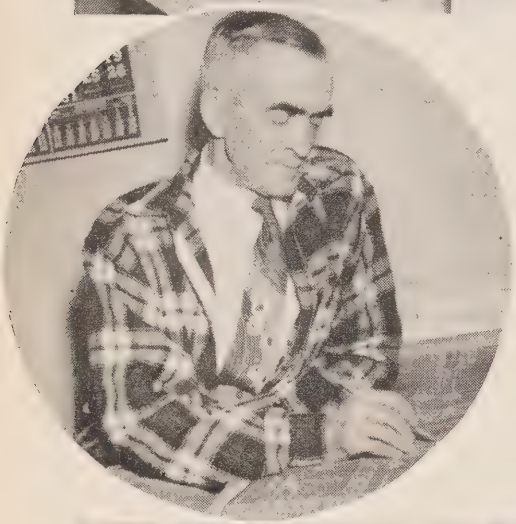


COMPARATIVE HEIGHT of dam may be seen in the upper photo, taken from the Quebec shore. Diversion channel and a portion of the aggregate conveyor system appear in the background.

SLUICEWAY SECTION of La Cave dam is shown in close-up in lower photo. Section will be 1,240 feet long, will have six 40-foot sluice-gates and forty-two 16-foot stoplog sluices.

AT LEFT, blasting and drilling are under way for the powerhouse site. Construction on erection bay section is shown at extreme left, with main dam construction in the background.





IN TOP PHOTO, La Cave Project Engineer B. D. Poyser (centre) and assistants, R. M. Fullerton, R. D. Wardell, study blueprint. They supervise the project from Head Office.

★

H. J. MacCRIMMON, left, as Superintendent of Railway Relocation is responsible for the diversion of 37 miles of C.P.R. line.

★

TIME OUT for a joke for Doug Johnson, Assistant Construction Superintendent at La Cave, Norm Henderson, Personnel Officer, Pat Campbell, Assistant Resident Engineer.



and highway will eventually be flooded to form part of the 12,000-acre forebay.

In connection with the railway line diversion, the Commission recently awarded a contract to a Toronto firm for ballasting, track-laying, final grading and alignment, in addition to other necessary work, on approximately 12 miles of the new track, at an estimated contract price of $205,000.

Picturesque Spot

Two years ago, the site of all this concentrated activity was just another picturesque spot on the Ottawa River where the waters rushed and swirled between thickly-wooded banks on their way to the sea. Preliminary work at the project got under way in the late summer and fall of 1948, with actual construction work beginning in the spring of 1949.

Since then, the gleaming white structure has rapidly taken shape. The rebellious waters have been tamed and compelled to flow where engineers dictate, and soon their energy will have been harnessed to serve the people of Ontario.

A similar harnessing has already taken place at Hydro's giant Des Joachims Generating Station, about 65 miles downstream from La Cave, and construction is well under way at Chenaux, where for the third time the Ottawa waters will repeat the sequence of power generation. An older plant, Chats Falls, which was placed in service in 1932, completes the picture of Hydro's Ottawa River power developments.

Link Between Systems

When La Cave is brought into service in 1952, it will constitute a link between the power systems of Northern and Southern Ontario. Power from this development will be transmitted over a 115,000-volt circuit now being built to connect with a line running from Crystal Falls Generating Station to Sudbury Frequency Changer and Transformer Station. In addition, a 230,000-volt transmission line, initially operating at 115,000 volts, has been completed, which will link La Cave with the Des Joachims station, 65 miles downstream, and thus with Hydro's Southern Ontario System.

Completion of the La Cave project, therefore, will be an important step toward the creation of a province-wide network which will provide an interchange of power between the Commission's various systems, and ultimately with the power networks of neighboring provinces and the United States.

Transmission Lines

For additional information on La Cave transmission line facilities, see story "New 60 System" on p. 16.

La Cave Facts And Figures

LOCATION :5 miles north of Mattawa, 65 miles upstream from Des Joachims.

CAPACITY: 144,000 kilowatts—192,000 horsepower.

NUMBER OF UNITS: 6.

OPERATING HEAD: 77 feet.

EXPECTED DATE OF INITIAL OPERATION: January, 1952.

AREA TO BE SERVED: Southern Ontario System (station will also form link with Northeastern Ontario).

MAIN DAM: Length 2,500 feet, Height 130 feet above solid rock.

TOTAL AMOUNT OF STEEL REQUIRED: 60,000 tons.

TOTAL AMOUNT OF CONCRETE REQUIRED: 370,000 cubic yards (sufficient to build a standard city sidewalk 1,406 miles long).

CONSTRUCTION STAFF (AT PEAK): 1,600.

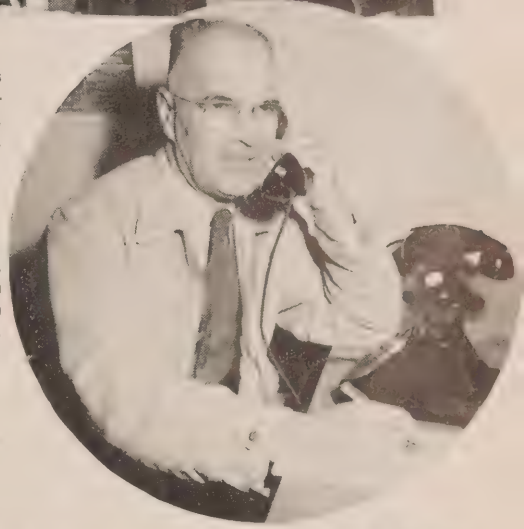
SPECIAL FEATURES: Headpond —12,000 acres, forming lake 30 miles long and ½ mile wide, extending upstream to Timiskaming.

Relocation of 37 miles of C.P.R. line. Relocation of 2½ miles of Provincial Highway No. 63.



CONSTRUCTION ACTIVITY at La Cave forms appropriate background for discussion between W. B. Crombie, Project Manager (left), and George Roy, Construction Superintendent.

★



BUSY MAN at right is J. A. McGillivray, project's Resident Engineer. Construction Engineer H. A. Jackson was unfortunately on holidays when these photographs were taken.

★

WHEN COMPLETED, the 144,000-kw station will resemble drawing below. Dam, which incorporates powerhouse, is 2,500 feet long.

(Architect's drawing by Kenneth H. Candy)

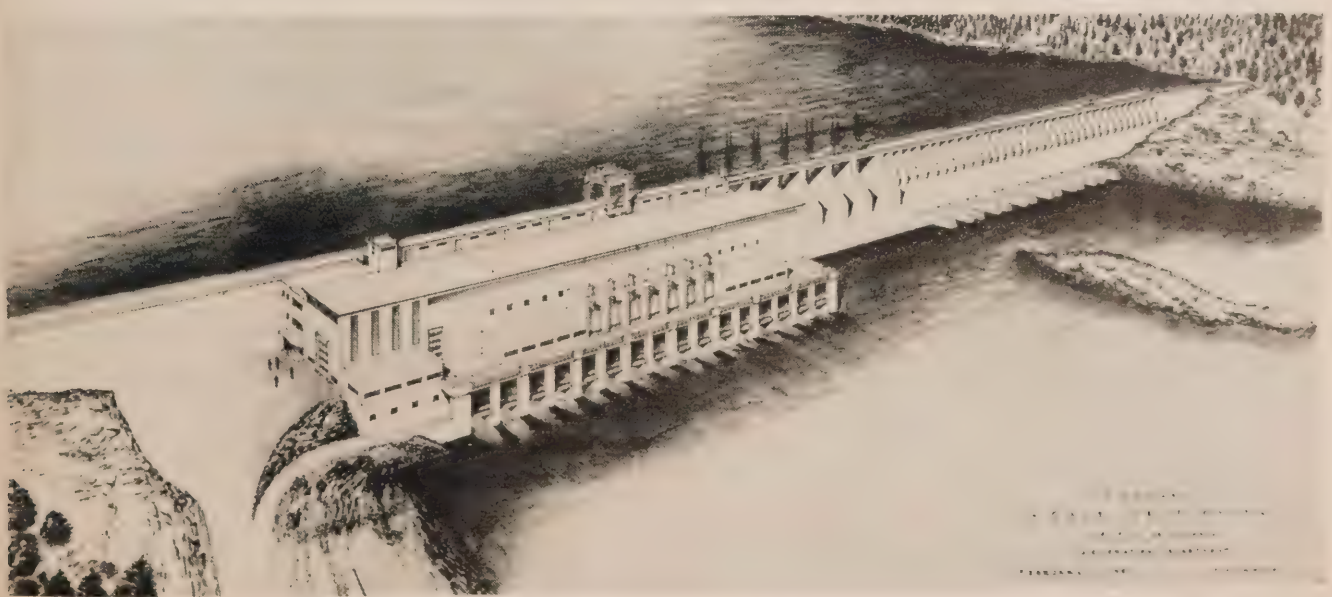


Photo-news

Central Ontario Meter Association

GENERAL VIEW of the Central Ontario Meter Association's semi-annual meeting held recently at the Empress Hotel in Peterborough. Identified in this picture are: James Wickiam, East York Twp.; Herb. Brown, H.E.P.C. Toronto Region; Ed. Kelly, North York Twp.; E. B. Foster and Tom. Sherk, Toronto; R. L. Dobbin and Frank Worsencroft, Peterborough; S. B. Upper and N. J. Lake, H.E.P.C.; Tom Honan, New Toronto; Jack Risebrough, Oshawa; Newt. Schell, Leaside; Stan. Mahon, Toronto. Papers were given by Albert Schoffield of the Ferranti Electric Company on "Watthour Meters Of The Early Days," and by E. B. Foster of the Canadian General Electric Company on "A Retirement Plan For Old Type Watthour Meters". During the day the entire group visited the new meter room at the Peterborough Utilities Commission. The Central Ontario Meter Association includes territory from the city of Toronto and surrounding townships as far north as Orillia, the eastern part of the Georgian Bay section and east to Deseronto. Officers for the current year are: President, J. R. Risebrough, Oshawa; First Vice-President, S. B. Upper, H.E.P.C.; Second Vice-President, D. Foreman, Mimico; Sec.-Treas., Geo. Van Bridger, Bowmanville.



PAYING TRIBUTE to N.H. Siegel and C. N. Greenwood for twenty-five years' service as Commissioners of Stratford P.U.C., employees of the commission donated two electric mantel clocks which were presented to the Commissioners at the annual Employees' Banquet held in the Banquet Hall of the local Y.M.C.A. J. Waldo Monteith, Chairman of the Commission, paid high tribute to the faithful service the two men had rendered to the people of Stratford. The Commissioners are pictured above receiving their clocks from little Diane Stickney, representing Miss Chippawa, and Maureen Richardson, representing Miss Des Joachims.



ABOVE: FOLLOWING RATIFICATION of the treaty which provides for diversion of additional water from the Niagara River, Hydro officials met with representatives from the Niagara Falls area to discuss preliminary steps of the Hydro program to increase output from the river by 800,000 to 900,000 horsepower. Pictured above at the conference are, left to right — S. W. B. Black, Senior Project Engineer, Ontario Hydro (seated); D. Forgan, Hydro's Director of Construction; D. C. Patten, Niagara Falls City Clerk; Maxim T. Gray, General Manager, Niagara Parks Commission; H. G. Male, Works Superintendent, Niagara Parks Commission; R. L. Hearn, General Manager and Chief Engineer, Ontario Hydro; F. M. Cairns, Vice-Chairman, Niagara Parks Commission; W. L. Houck, Mayor of Niagara Falls, Chairman Robert H. Saunders, Ontario Hydro; Reeve Gordon Munroe, Stamford Township; S. W. Johnston, Property Officer, Ontario Hydro; M. F. Kerr, Stamford Township Engineer; and J. R. Montague, Director of Engineering; H.E.P.C. (both seated).

Photo-news



RIGHT: FOOD SUPPLIES for Hydro personnel at the Commission's Abitibi Canyon Generating Station are loaded by Chairman Robert H. Saunders, Hydro Pilot Red Rogers and Engineer Bill Alexander. Situated near James Bay, with the nearest road 55 miles away, the Hydro colony was isolated when rail services were cut off. The special flight, ordered by Chairman Saunders, carried 225 quarts of milk, 70 loaves of bread, 45 lbs. of ham, 20 lbs. of bacon, 75 lbs. of butter, and several hampers of carrots, tomatoes, cabbages as well as other food.

New 6

by
Harry M. Blake
Hydro News



STRINGING CONDUCTORS on the 230,000-volt transmission line which carries Des Joachims' power to Hydro's Kipling Transformer Station. R. Burton is driving the tractor. Assisting is M. Nycko. "Dead-ending" on the "strain tower" are Frank Curtis, Jack Leach and Doug Newman.

OPENING of Hydro's Des Joachims generating station on June 28 was a truly epoch-making event. It marked more than the bringing into service of a new 358,000 kilowatt (480,000 h.p.) waterpower development second only in importance to the Commission's Sir Adam Beck station. Actually, it inaugurated an entirely new 60-cycle system which will work hand-in-glove with frequency standardization in Southern Ontario and with the tremendous program of improvement and modernization which the Commission is carrying out in the interest of all classes of electrical customers.

The first part of this new 60-cycle system, equipped with the most up-to-date transmission and distribution facilities, was brought into service following the opening at Des Joachims. The initial network stemming from this major development on the Ottawa River incorporates the Minden Switching Station about 50 miles north of Lindsay; the Kipling Transformer Station, to the west of Toronto, near Islington; the Scarborough Frequency-Changer and Transformer Station, a few miles east of Toronto; the Burlington Transformer Station about 8 miles from Hamilton, and the Westminster Frequency-Changer and Transformer Station near London. These stations, along with Des Joachims this summer and later also with Chenaux and La Cave, are cast for star roles in Hydro's new 60-cycle system. The Essa Transformer Station, near Barrie, from which new 60-cycle power will be supplied to the Georgian Bay Division, will also, before long, have an important part to play.

Transmission Facilities

The main arteries through which initial power supplies are being delivered to distribution points on the new 60-cycle system comprise approximately 829 route miles, or 1,200 circuit miles of 230,000-volt line and about 62 route miles or 120 circuit miles of 115,000-volt line.

Between Des Joachims and La Cave Generating Stations and Kipling and

System

Westminster Transformer Stations, the 230,000-volt transmission lines include 2,243 single-circuit steel towers and 1,909 double-circuit steel towers. The total weight of these structures has been calculated at 40,190 tons. There are 3,606 wire miles of steel-reinforced aluminum cable conductors, each measuring in cross-section 795,000 circular mills, with a total weight of 10,386 tons. Protection against lightning is provided by 1,660 wire miles of ⅜ inch ground wire, with a total weight of 1,211 tons.

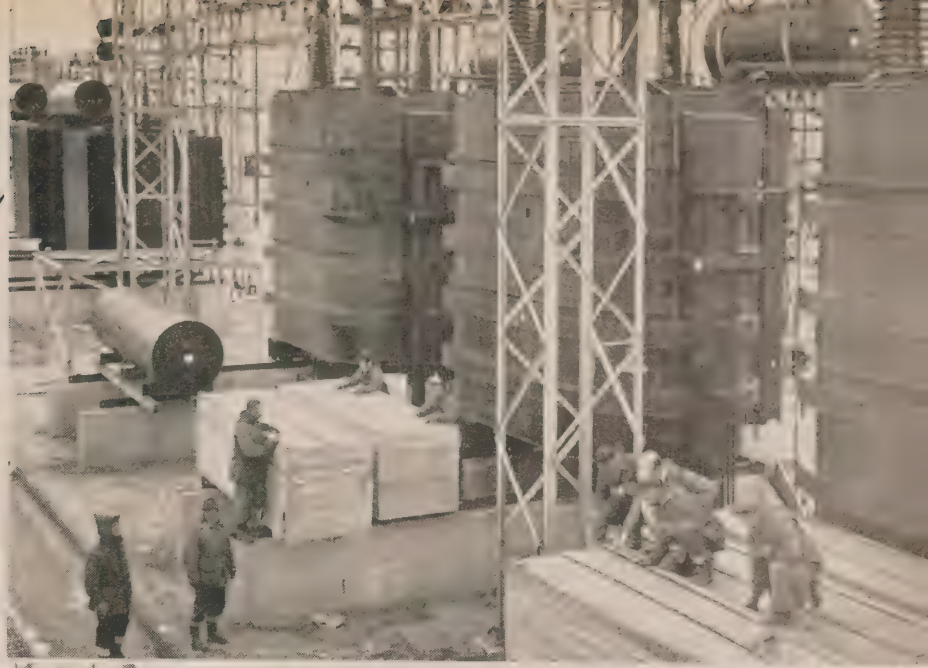
Communications

Manual and automatic telephone systems serving the powerhouse, the adjacent switching station, control dams, operating staff and the staff colony at Des Joachims are linked with Minden Switching Station, 93 miles away and with the Chats Falls development, 106 miles distant.

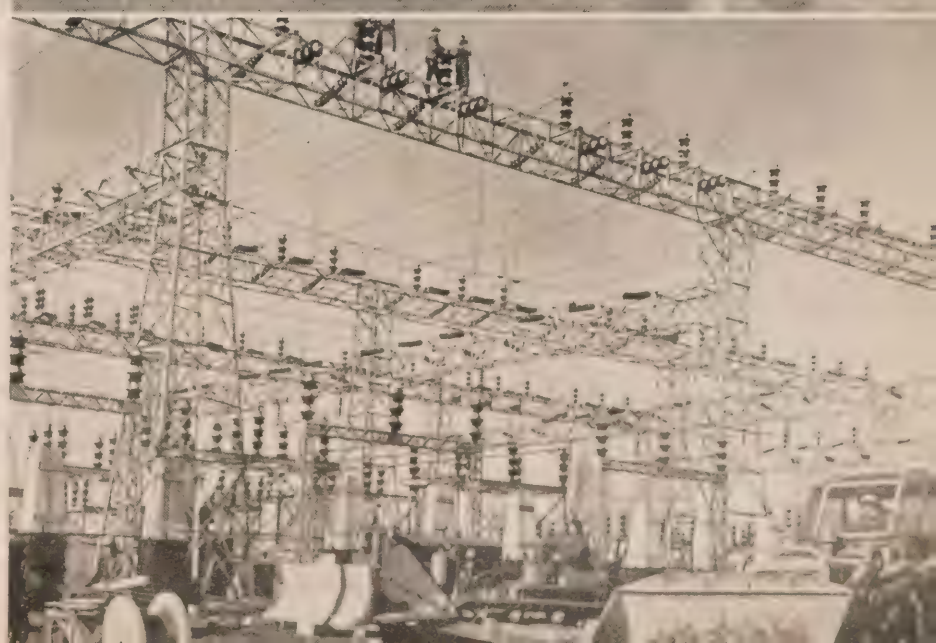
Emergency radio channels are provided for contact with major operating centres thoughout the Southern Ontario system. Power line carrier current installations are coupled to the high voltage power circuits to supply power relay control, telemetering, load frequency control and voice communications channels required for the operation of the Des Joachims development and the transmission of power over the high voltage transmission lines to strategic stations, such as Minden, Kipling, Burlington, London, Essa, La Cave, etc.

Preparatory Activities

The first stage in the setting-up of this new 60-cycle system has been already completed by the rounding-out



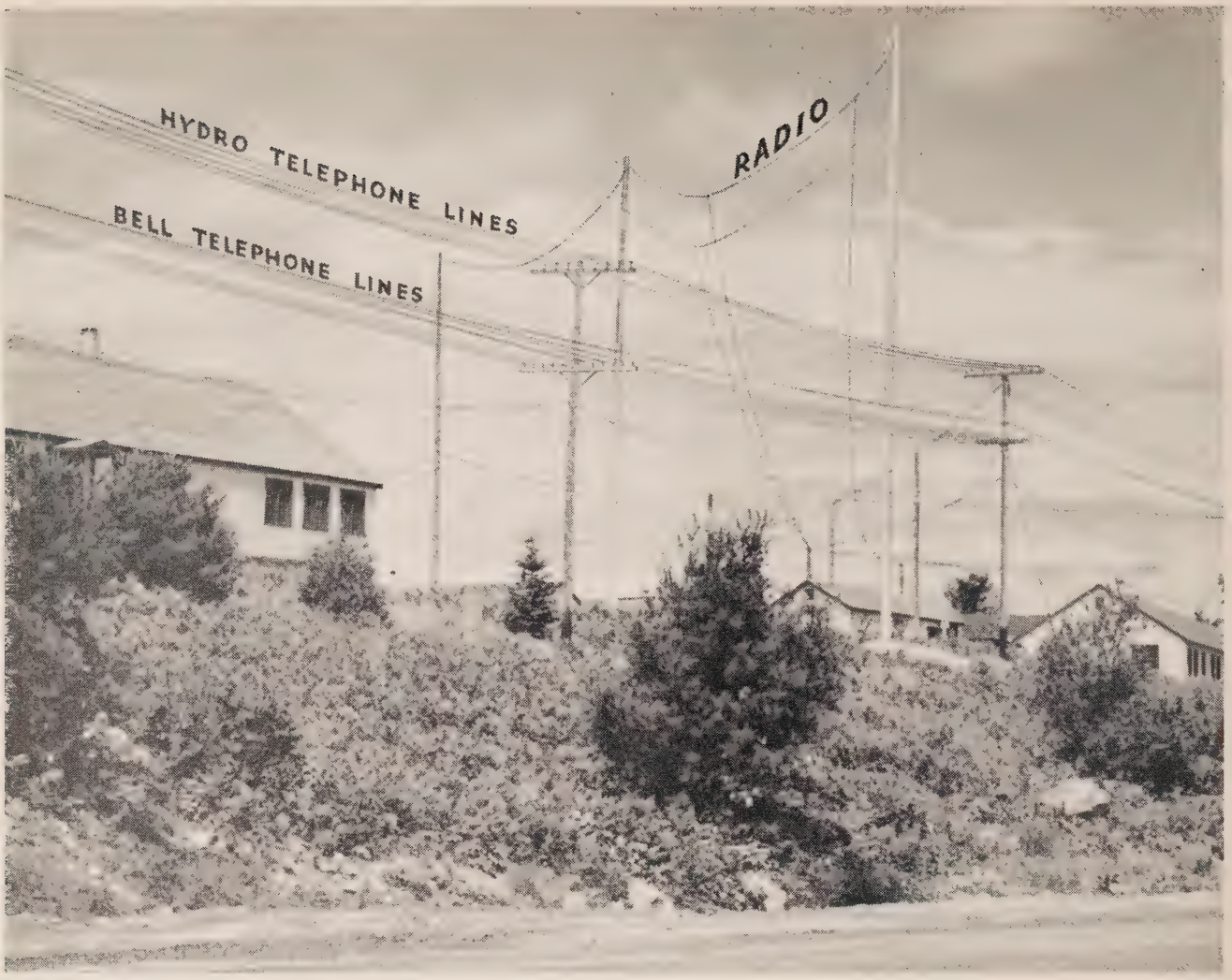




TOP: TWENTY-FIVE CYCLE transformers at Hydro's Kipling Station. In the foreground a transformer bank with a capacity of 75,000 kva. In background, regulating transformers.

CENTRE: "STRAINING IN" the Des Joachims line near Kipling Transformer Station. Raising an insulator are W. Lobeck, A. Rahm, J. Partridge, R. Brohm, G. Powell and J. Ferguson; and (right) sub-foreman Sheppard.

BOTTOM: BUS WORK on the 60-cycle switching structure at Kipling Transformer Station. Everywhere there was activity as Hydro's new 60-cycle system was made ready for power from Des Joachims Generating Station.



MANUAL AND AUTOMATIC telephones link Hydro's Des Joachims Generating Station with Minden Switching Station, 93 miles away, and with Chats Falls Generating Station, 106 miles distant. Radio provides contact with major operating centres in the Southern Ontario System.

of construction and station facilities so as to provide a tie-in via Minden with Kipling and Burlington.

Power is now being fed from Des Joachims — over two single-circuit lines as far as Holland Landing and thence by one double-circuit line — into Kipling at 230,000 volts and transformed there to 26,400 volts for district distribution and to 115,000 volts for further transmission to Scarborough. Some of this power passes on through the Scarborough Transformer Station for local distribution at 60-cycles. The balance is converted to 25 cycles at the Scarborough frequency changer sets for distribution to areas using that frequency.

One of the circuits from Des Joachims to Kipling was recently opened at Richview Junction, four miles north of the Kipling Transformer Station, and power is now being fed over a double-circuit to Burlington and then back to Kipling. A double-circuit line has been built from Burlington to intersect the Allanburg-Westminster line near Mount Hope. One circuit of this line is now being used to supply 60-cycle Des Joachims power to Westminster where the first of three 90,000 kva. transformer banks was placed in service on August 27.

Before very long Westminster will have a direct connection with Des Joachims. Already, construction is well advanced on a double-circuit 230,000-volt transmission line, paralleling the present Des Joachims-Kipling line as far as Minden and then passing straight across country to Westminster via the Essa Transformer Station near Barrie. The right-of-way for this line has been practically cleared throughout its entire length of 294 miles. At the end of August, supporting structures had been erected for 177 miles and 142 miles of conductors strung.

Station Equipment

The Kipling Transformer Station is located on 30 acres of ground west of Toronto and adjacent to Islington. Its primary function is to receive and transform power from Des Joachims and La Cave for the use of the Hydro municipalities in the Greater Toronto area.

Major equipment installed at Kipling may be briefly described as follows: Three 90,000 kva three-phase 60-cycle auto transformers, stepping down power from 230,000 volts to 115,000 volts and 133,200 volts; two 40,000 kva three-phase 60-cycle transformers, stepping down power from 230,000 volts to 26,400 volts; two 40,000 kva three-phase 60-cycle regulating transformers to handle the 26,400-volt power, and two 480,000 kva three-phase hydrogen-cooled synchronous condensers. Associated with this 60-cycle equipment, until frequency standardization is completed or sufficiently advanced in Southern Ontario, will be 230,000/115,000-volt 25-cycle switching and transformation, and 25-cycle equipment stepping down power from 115,000 volts to 26,400 volts. The cost of the Kipling Transformer Station is estimated at $10,000,000.

Burlington Station

The Burlington Transformer Station occupies 54 acres. New equipment to handle power from Des Joachims and later from La Cave is being installed as follows: Two 90,000 kva three-phase 60-cycle auto transformers stepping down power from 230,000 volts to 115,000 volts and 13,200 volts, and one

48,000 kva three-phase 60-cycle 13,800 volt hydrogen-cooled synchronous condenser. There will also be switching equipment for four 115,000-volt 60-cycle lines. This new equipment will bring the cost of the Burlington transformer station to an estimated $10,000,000.

The Scarborough Frequency-Changer and Transformer Station has two 25,000 kva frequency-changer sets with their associated 25-cycle and 60-cycle 115,000/13,200-volt transformers and related switching equipment. To supply 60-cycle power to the surrounding area two 25,000 kva three-phase 60-cycle transformers step down power from 115,000 volts to 26,400 volts. The Scarborough site comprises 20 acres. Cost of the station with new facilities is estimated at $6,000,000.

Located in 21 acres of ground near Barrie, the Essa Transformer Station will serve the Georgian Bay Division of the Commission's Southern Ontario System. Equipment will consist of one 54,000 kva three-phase 60-cycle auto transformer stepping down power from 230,000 volts to 1115,000 volts and 13,200 volts. There will also be some 115,000-volt equipment. Cost will be approximately $2,000,000.

At the Westminster Station there are already installed three 25,000 kva frequency-changer sets with their associated 25-cycle and 60-cycle 115,000/13,200 volt transformers and related switching. New equipment will consist of three 90,000 kva three-phase 60-cycle auto transformers, stepping down power from 230,000 volts to 115,000 volts to 13,200 volts and two 48,000 kva 60-cycle 13,800-volt hydrogen-cooled synchronous condensers. The Westminster Station site occupies 49 acres. Estimated cost is $12,000,000.

Minden is a mid-point switching station for eight 230,000-volt lines. The station occupies 6 acres. Estimated cost is $2,500,000.

One of the protective features of the new 60-cycle system is the provision of 230,000-volt oil-circuit breakers, each with an interrupting capacity of 5,000,000 kva. Kipling will have six of these oil-circuit breakers, Burlington five, Essa five, Westminster five, and Minden twelve. These breakers will isolate faulty sections of the system when short circuits occur as the result of lightning, wind storms or contacts with the transmission lines.

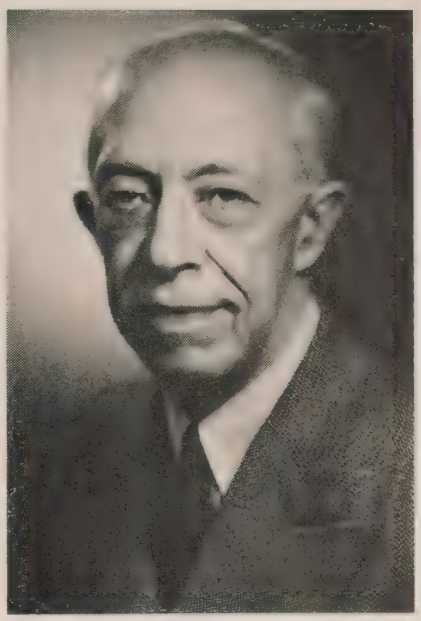
Testing Of System

Previous to the date of power deliveries, the lines and stations of the new 60-cycle system through which the initial services were to be supplied were tested. For the testing at Kipling, 60-cycle power was obtained from Scarborough. Following satisfactory equipment tests, the 230,000-volt switching equipment at Kipling and the 230,000 circuits to Minden and from Minden to Des Joachims were energized. It was then possible to energize and test the 230,000-volt switching at Burlington and Minden, and, following this, the circuits from Burlington to Westminster and from Burlington to Minden.

The work of testing the 60-cycle equipment at Westminster to receive the 230,000-volt power routed from Des Joachims proceeded independently of the rest of the 60-cycle system because 60-cycle power was available at Westminster from the frequency-changer sets already erected there. After testing of equipment, Westminster 60-cycle transmission was phased out with the Scarborough-Kipling-Burlington 60-cycle and checked for parallel operation with it.

The last stage in the preparatory activities was the overall checking of the entire 60-cycle, 230,000-volt and 115,000-volt systems.

New Commission Appointment



L. J. MARSH



WALTER S. PRESTON

APPOINTMENT of Walter S. Preston to the position of Statistician in the Operations Division was announced recently by J. M. Hambley, Director of Operations. Mr. Preston succeeds L. J. Marsh who retired after 33 years' service with the Commission.

Born and educated in Hamilton, Mr. Preston joined the Operating Departments' clerical staff at Niagara Falls, Ontario, in November, 1926. He moved to Toronto in 1932, when the present Statistical Department was first formed, and assisted Mr. Marsh in its operations until the latter retired in May.

VACANCY FILLED ON SARNIA BOARD

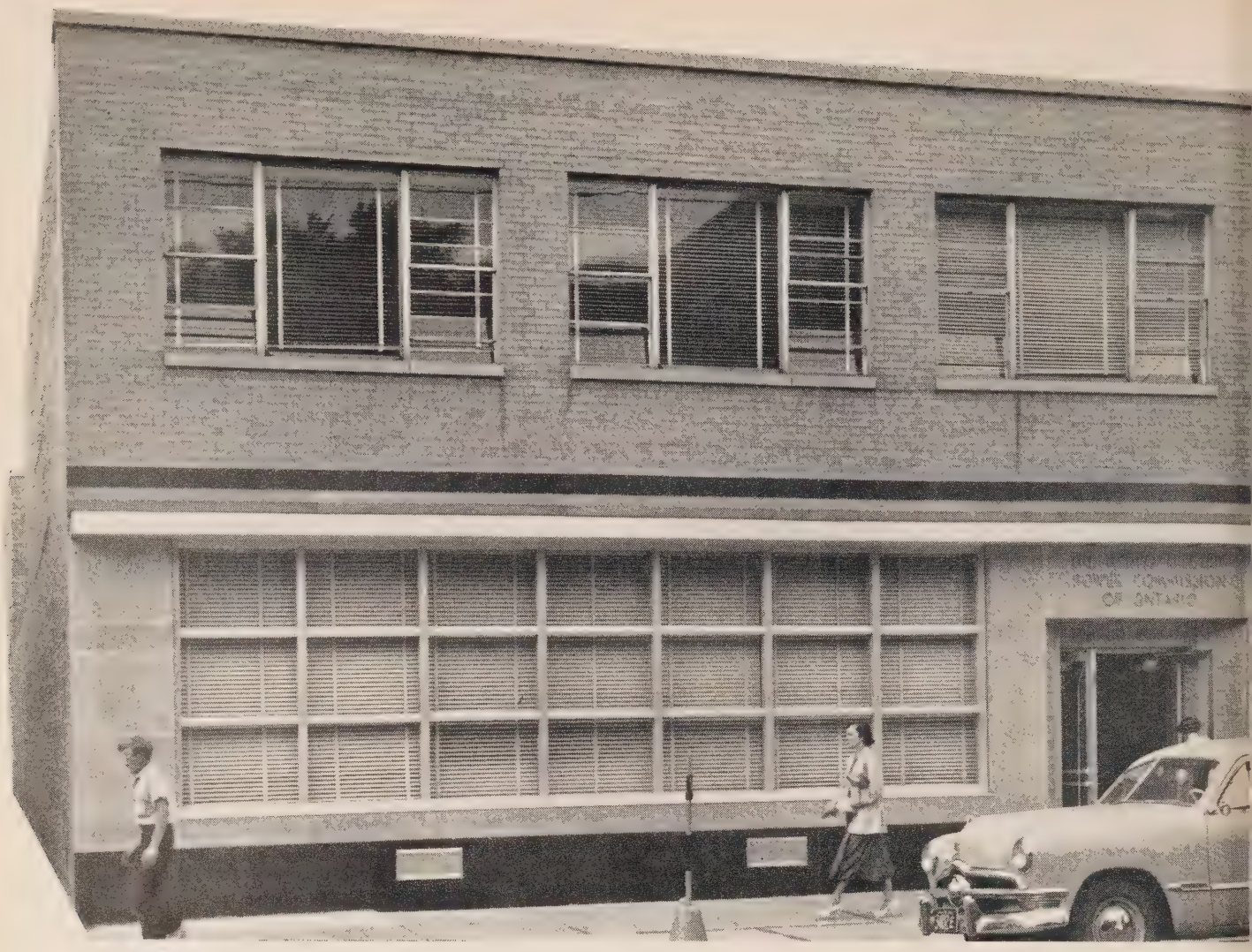
J. G. Church, former city alderman, was recently appointed a member of the Sarnia Hydro-Electric Commission to fill the vacancy caused by the death of G. N. Galloway, former Chairman.

Mr. Church an accountant, served on the city council from 1945 to 1948.

ADVANCE AUTHORIZED TO OPERATE SCHOOL

HYDRO recently authorized an advance of $3,239 to meet the Commission's share of the cost of operating the school in School Section No. 1, Purdom and Booth, at the Hydro colony of Cameron Falls on the Nipigon River.

Pending a re-organization now in process in this school section, the above sum has been found necessary to cover cost of instruction, instructional supplies and school plant operation.



HEADQUARTERS of Hydro's Toronto Region is this modern brick building at 210 Bloor Street West.

SERVING 331,500 CUSTOMERS

by
Edith B. Kent
Hydro News

IN a modern, yellow-brick building on Toronto's Bloor Street, some 150 men and women are playing a very important part in the lives of many thousands of Ontario citizens. They are the staff of Hydro's Toronto Regional Office, which combines the carrying out of administrative duties within the region with the interpretation of the policies of Head Office.

Covering an area of about 2,000 square miles, the Toronto Region extends from Nelson Township on the west to near Pickering on the east, and from Lake Ontario north to the Holland River and Lake Simcoe. It is about 60 miles in width at its widest point.

Customers served include 31 municipal Hydro systems, five large industrial consumers directly served by the Commission, and consumers in the Rural Operating Areas of Brampton, Woodbridge, Richmond Hill, Sutton, and Markham. Customers of all classes — domestic, commercial, rural, and industrial — total about 331,500, approximately 30 percent of the Commission's total number of customers.

Although the second-smallest in area of the nine regions, this heavily-industrialized section of the province is extremely important, as regards both number of users and amount of power consumed. A total of about 534,000 kilowatts, or 23 percent of the Commission's total load, is used in this region.

The large concentration of industry in this region, with the resulting demand for large blocks of power, calls for a highly-skilled technical staff able to deal satisfactorily with numerous industrial problems. In addition, the location of Head Office in the Toronto Region involves the handling of various specialized duties, while the Richard L. Hearn Generating Station, largest steam-electric station in Canada, will come under the jurisdiction of the Toronto Region when it is placed in operation in 1951.

One of Nine Regions

The Toronto Region is one of nine regions, which, with their sub-divisions — the 103 Rural Operating Areas — came into being in December, 1947. At that time, it was felt that, due to the expansion of the Commission, a more efficient electrical service could be maintained by having administrative duties carried out in closer proximity to the ultimate consumers. Originally housed in the Bailey Building, the Toronto Region

staff have been located in the Bloor Street building since November, 1949.

Headed by E. R. Lawler, Regional Manager, the Toronto office is divided into four main branches comparable to the divisions at Head Office whose policies they interpret: Consumer Service, Operations, Personnel, and Accounting.

Consumer Service Branch

In brief, the main function of the Consumer Service branch is to maintain contact with Hydro customers of all classes within the region. Under E. G. Maddock, Consumer Service Engineer, it deals with all phases of operation and management in municipalities, and certain phases of operation in Rural Areas, supplying information, discussing problems, lending assistance, and in general endeavouring to live up to its name.

For example, any problem arising in a municipality concerning expansion, such as the establishment of a new industry, is referred to the Consumer Service staff, who either deal with the matter or refer it to the department best fitted to handle it.

A subdivision of Consumer Service is the Electrical Inspection Department, headed in the Toronto Region by D. A. Cronkite. Its 27 qualified inspectors are assigned the task of inspecting electrical installations and equipment in municipalities within the region, making sure that the standards set by the Canadian Electrical Code are being observed. In addition, they assist rural inspectors, when required, in the same line of work.



NEW HOMES must have electrical installations inspected by Regional Inspectors. In the Toronto Regional Office, a couple fills in an application form for electrical inspection. The service is also provided for new industrial and commercial structures wired for electricity.

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Operations Division

Under the general heading of Operations comes a host of different activities which come under the supervision of R. H. Hillery, Operations Engineer. The station maintenance section looks after the repair and upkeep of equipment in transformer stations, large and small, switching stations, and similar structures. The Operating section supervises the actual operation of these stations. The line maintenance section is responsible for supervision of high- and low-tension transmission lines outside the boundaries of the Rural Operating Areas. In addition, the Line Maintenance Superintendent acts as consultant on line work for the Area Managers.

Also included in the Operations Division are the Forestry Section and the Meter, Relay, and Communications Section. Grounds and gardens at the various stations are tended by the Forestry staff, who also look after the trimming of trees near Hydro lines. Calibration of relays and graphic meters constitutes a large portion of the work of the Meter, Relay, and Communications Section. This

REGIONAL DEPARTMENT HEADS, seated at conference table in panelled board room, discuss administration problem. Left to right, E. G. Maddock, Consumer Service; E. R. Lawler, Manager; R. H. Hillery, Operations; and D. M. Chamney, Personnel. Inset: G. O. Houston, Accountant.



KIPLING T. S. (above), one of Hydro's largest new transformer stations, comes under the jurisdiction of Toronto Region. Varied industrial problems call for highly-skilled staff.

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MODERN MACHINES lighten the tasks of present-day accounting. Device at right can make out payroll, post ledgers, perform countless other duties. At back is a ditto machine.



staff also advises municipalities on specific problems regarding meters, and checks all new transformer equipment, including breakers, before it is placed in service. Maintenance of telephone lines and station equipment, radio equipment, telephone carrier and power line carrier equipment, and in general all services provided by communication links, are the responsibility of the communications men in this region.

The Personnel office is perhaps the most widely-known of all the Regional divisions. It is here that each prospective employee within the region comes to be interviewed, and here that his or her official records are kept. Here he discusses his problems with D. M. Chamney, Personnel Officer, and from here he receives notice of promotion or transfer.

Accounting Division

That very necessary division, Accounting, has a vastly different appearance from the old-fashioned accounting office, where clerks with green eyeshades hunched on high stools, making neat, precise figures in thick ledgers. The thick ledgers are still there, and so are the neat, precise figures, but most of the monotony and eyestrain has been removed with the in-

stallation of modern accounting machines.

These electrical devices make entries in ledgers, balance books, make out cheques and payrolls in a single operation, and perform the countless other tasks formerly done laboriously by hand.

In addition, the Accounting section, which is headed by G. O. Houston, looks after purchasing various supplies for the region, keeping supply records for the Area Offices and some of the smaller municipalities, handling various accounts and making out the payroll for all employees in the region. Three municipal accountants on the regional staff supervise and audit the accounts of the municipalities within the region.

Proximity An Advantage

The fact that all these sections — Consumer Service, Operations, Personnel, and Accounting — are under one roof has proved to be very advantageous, particularly when dealing directly with consumers. For example, when a new consumer comes seeking information and advice about having Hydro installed in his home or industry, it is possible to give him all the necessary information at one time, and to present to him a more complete picture of the services to be rendered him by Hydro.

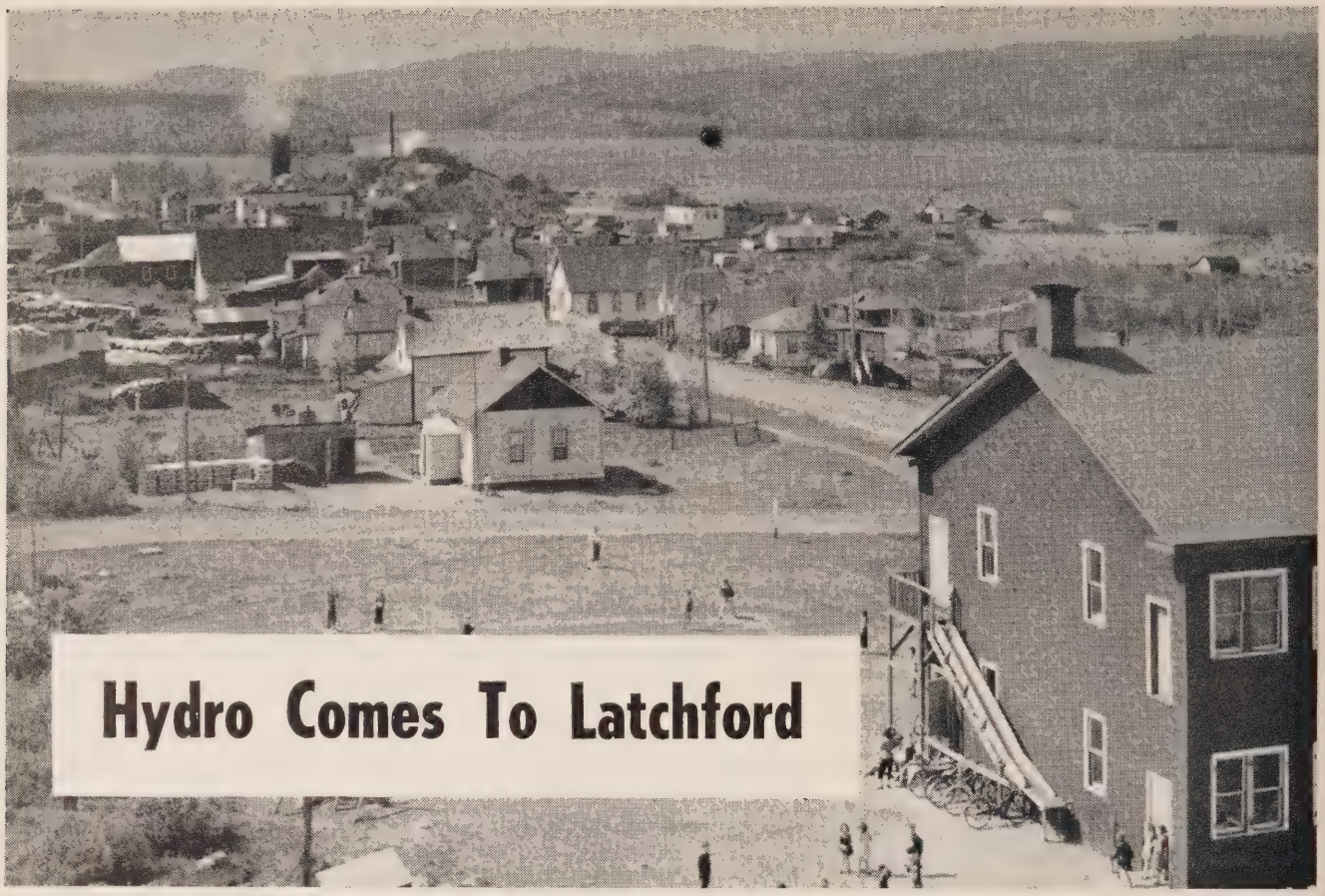
The regional staff thus achieves two purposes — it interprets the policies of Head Office, and at the same time is a self-contained unit administering the manifold duties of the Region.



HEAVY BLACK LINE shows the boundaries of the Toronto Region. Though small in area (about 2,000 square miles), it contains 33 percent of all Hydro customers, 23 percent of total load. Customers served include 31 municipal Hydro systems, five large industrial customers directly served by the Commission, and consumers in five Rural Operating Areas. Total is 331,500.



ACCOUNTING SECTION of the Toronto Regional Office occupies rear portion of the second floor in the region's Bloor Street building. This section looks after purchasing various supplies for the region, keeps certain supply records, makes out payroll for regional employees.



Hydro Comes To Latchford

Oil Lamps Disappear As Thriving Lumber Community Turns On Electricity

by
Ian L. Thomson
Hydro News

EARLIER this year, they put away the oil lamps and switched on Hydro at Latchford, a thriving lumber town with a population of some 463 people located on the Montreal River near Cobalt, Ontario.

Town records indicate that it was in 1909 that efforts were first made to secure power for the town, when it was suggested that power be harnessed from the rapids on the Montreal River situated near the entrance to the town.

Unfortunately these early efforts failed, and although numerous attempts were made through the following years to bring power in, it was not until the years following World War II that definite progress was made.

By this time the Ontario Hydro had taken over power facilities for the district, and although shortage of material prevented immediate action, Hydro officials met the members of Latchford Town Council and discussed various steps that had to be taken.

Owing to Latchford being an incorporated town, it was found that the town would have to form its own commission and build and own its own system. Power would then be bought from Ontario Hydro, and resold by Latchford Commission to its customers.

This suggestion was submitted to Latchford's ratepayers, and on receiving an affirmative vote, arrangements were completed in 1949 and a contract was signed with the Hydro.

Construction began in December of that year and was still being carried on at the time power was switched on a few months ago.

In line with the suggested proposals, a local commission was formed. George Shaw, Mayor of the town, was elected Chairman with D. S. Macdonald and Percy Bates as Commissioners and Harry Conroy as Secretary to the Commission.

Modern System Installed

By April, a modern power system had been installed providing for both commercial and domestic consumers. Thirty-seven street lights had been erected and approximately sixty-five premises had been wired for immediate service. Ultimately there will be approximately 135 consumers receiving power. In addition, both the lumber mills in the town, at present generating their own power, will be wired and will use this new source.

Harry Conroy will probably be making another "meter reading" trip soon, and with work on wiring premises still continuing, another batch of oil-lamps will no doubt be put away. Electric washing machines, stoves, refrigerators, irons, lamps and toasters are still making their first appearance in the homes of Latchford, and in the background of all these innovations is the "power" of Hydro which has helped to bring these benefits and conveniences to the people of this Ontario town.



GONE ARE THE DAYS of filling lamps, polishing reflectors and trimming wicks as Mrs. Bertha Dubie and her daughter, Delima, assemble their new lamps. The "old timers" shown on the right are due for retirement — making way for their modern counterparts.



A FLICK OF A SWITCH and power eases ironing-day chores. Quite a difference from using the "old trusty" shown in top picture. Washboard backaches are also past as the electric washer takes over.



FIRST METER READING at the first house inside Latchford for the first power period. Mrs. Bates, wife of Latchford Hydro Commissioner Percy Bates, looks on as Harry Conroy makes the reading.

Latchford

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STREET LIGHTING is a luxury that the people of Latchford are now able to enjoy for the first time in the town's history. Photograph at right shows one of the modern lights mounted on a Hydro pole which is also carrying a transformer and various power lines for the town's new power system.



ENTRANCE TO LATCHFORD is shown in the photograph below. The bridge rests across a dam which, operated by the Department of Public Works, controls the flow of water to Hydro generating stations situated further along the river. The hoisting apparatus seen on the left, at present operated by steam power, is due for conversion in the future.

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AT PRESENT GENERATING their own power, the town's two mills will be switching over to Hydro power shortly. Photograph at left shows logs being cut at the A. J. Murphy Lumber Co. mill. Working for a season of approximately five months the Latchford mills ship lumber to all parts of the world.

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I WISH I'D SAID THAT!

A GAME TO INCREASE YOUR VOCABULARY AND IMPROVE YOUR CONVERSATION

By Lincoln Hodges

EVER miss the point, say the wrong thing, and then blush? Here's an exercise in the art of conversation. First comes a statement that's made to you; then three possible replies you might make, only one of which proves that you get the drift. You pick the one. If you pick 19 or 20 right, you're superb; 17 or 18, just wonderful; 14 to 16, average-plus. Answers are below:

1 "That lawyer likes to EQUIVOCATE."
A But that's the judge's job.
B He'd rather settle out of court.
C He evades the issue.

2 "An AMNESTY is our only hope."
A An exchange of prisoners?
B A pause in hostilities?
C A general pardon?

3 "What a LUDICROUS business!"
A Isn't it ridiculous!
B Isn't it profitable!
C Isn't it sad!

4 "The czars governed by UKASE."
A Yes, by divine right.
B Their edict was law.
C A reign of terror.

5 "The ladies like an URBANE man."
A A woman's home companion.
B Someone cosmopolitan.
C A man with a fortune.

6 "I don't like the way he SKULKS."
A He's sneaky.
B He's moody.
C He's lazy.

7 "It's their VICENNIAL anniversary."
A Are half-years celebrated now?
B Twenty congratulations to them!
C Completing a five-year plan?

8 "I regret his DEFECTION."
A So he deserted!
B Oh, he'll get well.
C His dislike for you?

9 "It's an IDYLLIC life."
A Yes, it's simple.
B Yes, it's perfect.
C Yes, it's effortless.

10 "Such acts are PROSCRIBED by custom."
A They're required.
B They're recorded.
C They're rejected.

11 "He made a PERCIPIENT reply."
A Keen, isn't he?
B Hasty, wasn't he?
C Obvious, wasn't it?

12 "There's a new government FIAT."
A Another failure!
B Another proclamation!
C Another bloc!

13 "He's a CONGENITAL idiot!"
A A jolly fool.
B Dropped on the head as a baby.
C Born that way.

14 "I'm PROMULGATING the new system."
A Where do you proclaim it?
B Why do you oppose it?
C How do you test it?

15 "His case is EXIGENT."
A They'll throw it out of court.
B Glad he's out of danger.
C I'll call an ambulance.

16 "I don't like his DIALECTICS."
A What's wrong with his logic?
B What's wrong with his anecdotes?
C What's wrong with his accent?

17 "Where do you put the NUMERATOR?"
A Above the line.
B Below the line.
C Between the lines.

18 "Our enemies are about to COALESCE."
A They're burning up?
B They're breaking apart?
C They're getting together?

19 "Good ARCHETYPES are the key to success."
A The original records?
B The original patterns?
C Original designers?

20 "It was a scanty CORTEGE."
A Not enough flowers.
B Not enough marchers.
C Not enough clothes.

ANSWERS

1 C To equivocate (e-KWIV-o-cate) is to mislead by the use of double meanings. It comes from a Latin word that means to call the same name.

2 C An amnesty (AM-nus-tee) is a general pardon—a "forgetting" of offenses. From its Greek root, *amnestia,* we have the word "amnesia," to describe loss of memory.

3 A Ludicrous (LOO-dih-krus) means causing amusement, ridiculous. It comes from the Latin words for sport and play.

4 B The word ukase (YOO-case or yoo-CASE) comes literally from the Russian. In Russia the Czar's edict was law.

5 B Urbane (er-BANE) means polite, courteous, civilized in manner—from the Latin *urbs,* city.

6 A To skulk is to lurk or hide in a sneaking manner.

7 B Vicennial (vie-SEN-e-ul) means occurring once in twenty years; the Latin *vicies,* twenty, plus *annus,* year.

8 A Defection (de-FECK-shun) means desertion from responsibility, duty, religion etc.; backsliding.

9 A Idyllic (eye-DILL-ick) means simple or unaffected, in the sense of a simple life in rustic surroundings; an idyl is a poem about a country scene.

10 C To proscribe (pro-SCRIBE) something is to forbid it; in ancient Rome someone proscribed was "written off," banished.

11 A Percipient (per-SIP-e-unt) means keen or quick to understand; having much perception.

12 B A fiat (FY-at) is an absolute command. It comes from the Latin, as in the biblical *"Fiat lux,"* "let there be light."

13 C Congenital (kun-JEN-ih-tul) means existing at or before birth, and not due in any way to what occurs after birth; the Latin roots mean "born with."

14 A To promulgate (pro-MULL-gate, or PRAWM-uhl-gate) is to proclaim; to publish abroad.

15 C Exigent (ECK-sih-junt) means pressing, requiring immediate attention.

16 A Dialectics (dy-uh-LEK-ticks) is a method or theory of logic, or of argument.

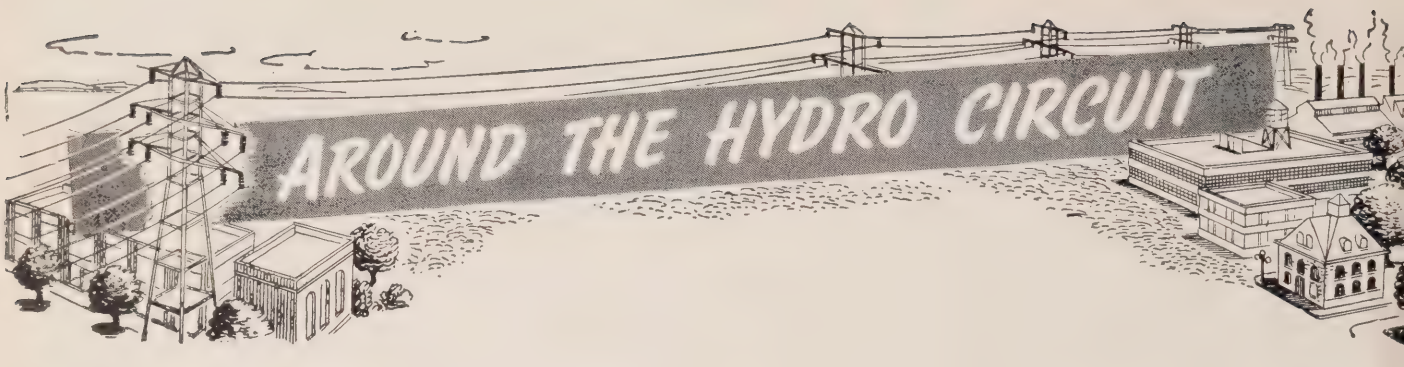
17 A The numerator (NYOO-muh-ray-ter) of a fraction is the number that goes above the line, as the 1 in the fraction ½. A numerator is also someone or something that counts.

18 C To coalesce (ko-uh LESS) is to unite or merge; from the Latin "grow together."

19 B The archetype (AR-keh-type) comes literally from its Greek roots, *arche,* the beginning or first, and *typos,* pattern. Hence, the original model.

20 B A cortege (kor-TEZH, or TAYZH) is a procession, or train of attendants we often apply the word, which we got from the French, to a funeral procession.

—REPRINTED FROM COSMOPOLITAN



Peak Consumption At St. Catharines

ST. CATHARINES Public Utilities Commission established a new high in power consumption during the month of May when a peak load of nearly 28,000 kilowatts was recorded. According to Manager Ray Pfaff, the May power peak was more than 4,200 kilowatts over the last record peak in April.

To meet the expanding electrical demands of the city nearly 14 tons of aluminum wire will be used in a new line to carry power from the 110,000-volt substation at McKinnon Industries to the Vine Street substation in St. Catharines. The new line will enable the feeder circuit which loops the city to carry a greater load, and thus prevent breakdowns in the service.

COMMISSION AWARDS COLONY CONTRACT

Award of a contract for the building of ten operators' houses, five two-car garages, and roadway as well as installation of colony water supply and sewage disposal facilities at Hydro's Chenaux Development to M. J. Sulpher and Sons, Limited, Renfrew was announced recently.

This phase of construction at the Chenaux project on the Ottawa River, 10 miles north of Renfrew, will involve an expenditure of approximately $126,939 it was pointed out. The 120,000-kilowatt (160,000 horsepower) Chenaux development is scheduled for initial operation in December this year.

WINDSOR CHANGE COST $897,000

Windsor Utilities Commission has been advised by Hydro that the city's share of cost in connection with frequency standardization will be approximately $377,000. This will provide for changes in substations, street lights and distribution systems. In addition the cost of standardizing the meters is estimated at $520,000.

Merrickville Buys Distribution System

PURCHASE of the municipal distribution system from Ontario Hydro has been announced by Village of Merrickville officials. In making the announcement, Clerk A. H. Johnston stated that the village had bought distribution lines and associated facilities within the boundaries of the municipality from the Commission at a price of $18,000. Originally owned by the Rideau Power Company, the system was recently taken over by the Ontario Hydro when it purchased the assets of this company which also included a 1,200-horsepower plant on the Rideau River.

In acquiring the distribution system from the Commission, Merrickville agreed to bear the cost of any extensions made by Hydro since it took over the properties of the power company earlier this year, while the village will carry out a rehabilitation of the system at an additional cost of approximately $20,000.

The village has a population of about 1,200. Its industries include a casting factory, an engineering company, lumber yards, a woollen mill and a new canning factory.

Negotiating on behalf of Merrickville were Reeve Fred Lannin, Stanton McCarney, James Ogilvie, William Defitt and Arthur Telford.

BURLINGTON HYDRO PLANS NEW LIGHTING

AT a recent meeting of the Burlington Hydro-Electric Commission it was decided to replace the series lighting of the town, where it is still in effect in the town, with a multiple lighting system before the new transformer station for distribution of power from Ontario Hydro is built. Installation of the new system is scheduled for completion by April, 1951.

Under the series system, the lights are similar to a string of Christmas tree lights—where one goes out, all go out. This condition will be remedied by the newer method of multiple street lighting.

Extensive Building At Ear Falls Plant

A CONTRACT was awarded recently to a Fort William company for the construction of four operators' houses, a 10-car garage, colony water supply, sewage disposal, and a 1,600-foot roadway at the Commission's Ear Falls Generating Station on the English River.

The houses are to be of two different types of design and will be of insulated frame construction, with asbestos shingle exteriors.

Contract for the colony water supply system will include a pump house, excavation for approximately 2,200 lineal feet of four-inch water main, and installation of fire hydrants and building services.

POWER COMES TO ST. CHARLES

Residents of St. Charles will shortly be enjoying Hydro service in their homes and places of business, the Northeastern Regional Office of the Commission at North Bay announced recently.

Construction of the power line has been commenced in order to bring power from the Warren Distribution Station which was completed last year. This line will eventually run through to the French River to service West Arm, Noelville, Alban, Rutter, Bigwood and French River.

HAMILTON LOAD UP 8 PERCENT

Hamilton's power load in the first five months of this year was approximately 8 percent higher than in the corresponding period during 1949, according to a recent announcement by A. W. Bradt, General Manager of the Hamilton Hydro-Electric Commission. Peak consumption in May was 158,000 kilowatts, only 2,000 less than in December, the heaviest month of consumption in 1949. Mr. Bradt said new industrial and additional domestic consumption accounted for the increased load.

Service Extended in Dryden District

COMPLETION of Hydro's 1949 rural program in Dryden R.O.A. was recently announced by A. Wager, Area Manager.

"Although all lines are installed from Wabigoon to Vermilion Bay, there are still a number of homes that are not yet wired for electrical service," Mr. Wager reported. "Work is at present underway on several of these homes," he said.

Over 200 homes have received service since the beginning of the 1949 program. The communities served now include Wabigoon and points west, such as Dryden, Oxdrift, Minnitaki, Eagle River, Waldhof and Vermilion Bay.

The 1950 program is progressing satisfactorily and includes further extensions in the above communities also extensions to Red Lake Road and Eton-Rugby.

D. E. CHARTERS DIES

DALTON EDMUND CHARTERS, age 61, former Chief Electrical Engineer with the Hydro Division of the Windsor Utilities Commission, died recently after a two-week illness.

Born near Napanee, Ontario, Mr. Charters grew up in the area and later attended Queen's University. While there, World I broke out and he enlisted in the Engineering Corps of the Canadian Army. After his return he graduated from Queen's in 1919.

One of his first positions was with an electrical company in Chicago. He was there only a short time before he came to Windsor to become Chief Electrical Engineer with the Windsor Hydro, which post he held until his death.

Mr. Charters was an active member of the Rates Committee of the Association of Municipal Electrical Utilities. An ardent golfer, hunter and fisherman, he was a member of the Essex Golf and Country Club and the Windsor Sportsmen's Association.

He is survived by his widow Mrs. Irene Fowler Charters, one son, one daughter, two brothers and two sisters.

HONOR SIR ADAM

(Continued from page 9)

No. 1. In three years we shall be delivering power from Plant No. 2 then in 5 or 6 years, Plant No. 3. Yes, from now on those who visit the great plant on the Niagara will remember Sir Adam Beck — he who fought so hard to bring to his fellow citizens and to their children and their children's children, low-cost electric power in abundance."

In recalling the early days — back in 1906 — Mr. Saunders stated that Hydro had started with a mere handful of engineers and clerks. At the end of 1925 there were 3,350 employees on the payroll. The capital assets of the Commission alone had increased from almost nothing to nearly $200,000,000 in the course of 19 years. Including the distribution systems of the municipalities, the total assets were close to $277,000,000. At that time, the Hydro Chairman continued, the Commission was serving customers throughout the province through 22 generating stations. Approximately 440 municipalities of all categories were receiving Hydro power and a start had been made in rural construction with the completing of 1,525 miles of primary rural line.

Today, proceeded Mr. Saunders, the Commission's capital assets, by the most recent reckoning were close to $909,000,000. Including those of the 309 cost municipalities and the six fixed-rate municipalities, Hydro's capital assets were now well in excess of $1,183,000,000. Every generating station completed, every mile of line constructed and every building erected added to these assets.

At the present time, the Hydro Chairman pointed out, the Commission was supplying power to 1,017 municipalities of all categories. Hydro is also serving 279,000 rural consumers over 33,688 miles of rural line. At the same time, the Commission ranked high as an employer. During a recent peak construction month there were 22,918 employees on the pay roll.

When paying tribute to the late Sir Adam Beck, Mr. Saunders said, "I feel that his spirit is still with the wonderful organization he founded and that we shall drive ahead with unabated vigor and perhaps increased knowledge and skill, to the objectives he had in mind — the providing of the best electrical service in the world for the people of Ontario."

NEW STREET LIGHTING ON UNIVERSITY AVENUE

New street lights will be installed on University Avenue in Toronto with the city crest on the aluminum base. Underground wires will go up through the centre of the pole to the light sockets. The lamps are to be 750 watts instead of the usual 500-watt capacity.

Latchford Hydro Officials

(See Story on Page 24)



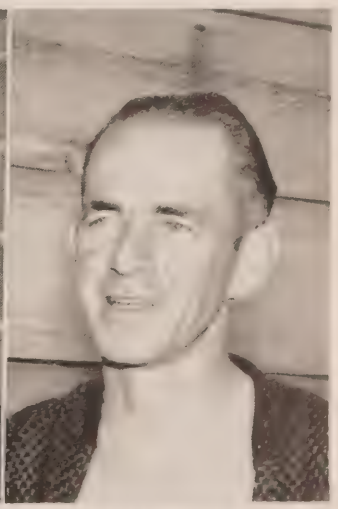
PERCY BATES
Commissioner



GEORGE SHAW
Chairman



D. S. MacDONALD
Commissioner



HARRY CONROY
Secretary



HYDRO'S FLORAL CLOCK at the Sir Adam Beck Plant was a main point of interest when ladies press group toured the Niagara Parks system.

Visit Floral Clock

MEMBERS of the Hamilton Branch, Canadian Women's Press Club, and of the Association of Professional Women Writers, from Niagara Falls, N.Y. are pictured at the floral clock, at the Sir Adam Beck-Niagara Generating Plant No. 1 (formerly Queenston) recently, during their tour of the Niagara Parks system, as guests of the Niagara Parks Commission. Following the tour they dined at the Refectory. Maxim T. Gray, General Manager of the Commission was toastmaster, and Hon. Charles Daley, welcomed the writers.

Front row, from the left, Miss Betty Evans-Jackson, Welland free lance writer; Miss Jessie Beattie, Hamilton author; Miss June Baker, Social Editor, Welland Tribune; Mrs. Vera Sullivan, Niagara Falls, N.Y. poetess; Miss Theodora Vinal, librarian at Gaskill high school, and author of the recently published "Niagara Portage"; Margaret Goff Clark, free lance writer and poetess, Niagara Falls, N.Y.; Mrs. Marjorie Freeman Campbell, Hamilton, President of the Press Club, free lance writer and author; Mrs. Marjorie Oliver, of London, Women's Editor, London Free Press, and Ontario Vice-President of the Canadian Women's Press Club; Miss Lois Clemens, Social Editor, Niagara Falls Evening Review; Miss Mabel Burkholder, historian of Hamilton Spectator; and Miss Kay Daughen, Hamilton Spectator staff writer.

Back Row: Miss Doreen Johnson, Welland Tribune staff writer; Miss Leslie Campbell, Hamilton; Miss Grace Wright, Publisher of Mount Forest Confederate; Miss Doris Clark, Hamilton; Mrs. Katharine A. Marston, Publisher, Elora Express; Miss Jane McKee, Reg. N., of Winona, Ontario, who was decorated by French Government for work during World War I; Winnifred Stokes, Niagara Falls Evening Review editorial staff, and Past President of the Canadian Women's Press Club; Mrs. Mary Moore, dietician and columnist, Hamilton; Miss Agnes Anderson, C.H.M.L.; Miss Pearl Clark, of Russell Kelly Advertising Agency, and President of the Hamilton Advertising Club; Miss Virginia Hunter and Miss Teddy Forman, Hamilton.

At the dinner afterwards Miss Jessie Beattie, Niagara-on-the-Lake, author of "Blaze of Noon" to be published this autumn, addressed the group. Mrs. Campbell announced that an autographed copy of her book would be presented to Miss Stokes at a later date, in recognition of 31 years' service on the Review's editorial staff. Flowers were presented to Miss Clemens and Miss Stokes for arranging the tour.

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



Toronto's Canadian National Exhibition is a city within a city! Engineers tell us that more than 200,000 lamps were put in use this year. The exhibitors required double the amount of power that the exhibitors of 1940 used—over 6,000 horsepower. And when the new electrical system is completed, the Exhibition will have a power supply comparable to a city with a population of 15,000 to 20,000.

Numerous displays in the Electrical Building illustrated many advances in electrical household equipment. We refer to features such as the spaciousness of refrigerators, large compartments for storing frozen foods, and on some models, the automatic door closing. More guides for oven shelves, light in the oven and the tilt-up elements to enable cleaning were also noted.

Household furnishings showed vibrancy of color and majesty in appearance. We refer to exhibits of gold-leaf carved valance boards, Candart patterned drapes and paintings by new Canadians. The many models of television sets attracted much attention.

The extensive array of musical instruments on display at the C.N.E. seemed to indicate that we Canadians are learning to "blow our own horn."

In the new food lines we were interested in raisins in the breakfast cereal, new packages for bacon, various colored bottles of salt, accent for vegetable cooking, canned pie fillings, new brands of cake mixes and new coffee concentrate. To top it off, we tasted Canadian made Yoghourt and whole wheat wafers.

Concerning Acid Milk it is said: Yoghourt adds life to your years and years to your life." To make it you heat milk to boiling point for 1 minute, then cool. Inoculate each quart of milk with 2 tablespoons of Yoghourt. Bottle and cap milk, then incubate the bottle at 110 degrees until there is a firm curd. (This requires 3 to 4 hours). Yoghourt is ready to eat after having been cooled. Serve over fresh fruit or flavor with coffee. chocolate, vanilla and eat on toast or biscuits.

Hurry-up dinner! Turnip greens cooked in 15 minutes. Poach eggs in covered pan, set off the element. Meanwhile peel fresh tomatoes. Serve the poached egg in a nest of turnip greens and accompany with sliced tomatoes.

An easy dessert: To a cupful of whipping cream, whipped stiff, add a cupful of nut brittle, rolled fine. Then fold in a cupful of drained, cubed peaches. Pile in sherbet dishes and chill thoroughly.

Why, raves a certain man at our office, does garlic aroma hang on to one's hand. Why, we ask, don't you use garlic salt. Or spear a clove of garlic with a meat skewer and place in the gravy for a few minutes then remove clove and skewer.

CANNED PEACHES

Pick out fully ripe peaches without blemish or bruise. Blanch the fruit by plunging into boiling water for 30 to 60 seconds or until the skins will wrinkle. Dip at once into cold water then skin them. Remove pits; otherwise leave whole. To prevent darkening, drop into cold salted water (tsp. salt to each qt. water). Precook by simmering in boiling syrup for 8 minutes. Pack pieces cut side down in jars. Cover with the hot syrup. Seal, then loosen zinc band 1 inch. Place on lower shelf of electric oven pre heated to 300 degrees. Reset temperature indicator to 275 and leave in oven for 20 minutes.

One 11 quart basket of peaches yields about 8 quarts. For 8 jars of peaches boil 6 cups sugar and 12 cups water.

Splatter-proof sausages? Simmer regular sausages for a few minutes, drain, then fry or bake them in the same pan. This hot-water treatment keeps the sausages plump and tender, prevents fat splattering during cooking.

This is no pipe dream: We use a pipe cleaner with silver polish on it to slip between the tines of the forks. It does a good cleaning job.

Joy C. showed us a surprising quick-trick: Dissolve a lemon jelly powder with hot tomato juice and pour into a mould. This makes delectable tomato jelly.

A good trio for the family bedtime snack: Tea biscuits with cottage cheese and grape jelly.

Fruit Salads for Sunday are indeed a pleasure. Arrange cubes of watermelon, slices of canteloupe, halves of cooked peaches, a bunch of grapes, a mound of cottage cheese mixed with pieces of mixed peel on lettuce leaves. Then mix 3 tablespoons of peanut butter in a cup of mayonnaise and serve with the fruit salad.

Under par performance is fine on a golf course but not in an electric refrigerator. When frost has built up to ¼ inch on the freezing unit, the efficiency is much impaired—so keep an eye on defrosting-time.

A family affair meal—Liver and bacon, steamed onions, cooked vegetable salad, peach ice cream, cookies and tea

Short orders: 1. Clean the rubber covered electric cord with a soapy cloth. Grease weakens rubber covering.

2. Use a rubber scraper in the bowl of the electric mixer instead of metal spoon.

Getting back into routine after the holiday is like doing homework after school.

MUNICIPAL LOADS JULY, 1950

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION

(25-Cycle)

	Peak in K.W.	Domestic Consumers
Acton	2,026	686
Agincourt	466	200
Ailsa Craig	197	167
Alvinston	150	233
Amherstburg	1,345	857
Ancaster Twp.	555	376
Arkona	133	132
Aurora	1,674	899
Aylmer	1,254	861
Ayr	371	248
Baden	590	172
Beachville	846	188
Beamsville	640	480
Belle River	322	398
Blenheim	609	648
Blyth	333	185
Bolton	284	220
Bothwell	159	209
Brampton	3,755	1,902
Brantford	22.034	9,280
Brantford Twp.	2,640	2,314
Bridgeport	273	227
Brigden	134	137
Brussels	307	275
Burford	397	265
Burgessville	95	63
Burlington	2,010	1,464
Burlington Beach	649	774
Caledonia	386	483
Campbellville	69	64
Cayuga	206	214
Chatham	8,464	5,193
Chippawa	357	434
Clifford	194	145
Clinton	1,044	698
Comber	151	153
Cottam	108	155
Courtright	63	122
Dashwood	188	118
Delaware	116	82
Delhi	626	730
Dorchester	119	162
Drayton	200	181
Dresden	632	560
Drumbo	162	110
Dublin	67	71
Dundas	2,995	1,599
Dunnville	1,427	1,178
Dutton	227	247
East York Twp.	13,219	13,969
Elmira	1,766	650
Elora	633	390
Embro	220	147
Erieau	294	247
Erie Beach	51	98
Essex	746	645
Etobicoke Twp.	14,431	9,540
Exeter	1,060	709
Fergus	1,959	830
Fonthill	340	346
Forest	663	568
Forest Hill	4,405	4,163
Galt	11,411	4,936
Georgetown	2,378	1,085
Glencoe	213	265
Goderich	2,105	1,531
Granton	67	90
Grimsby	1,005	741
Guelph	12,745	6,413
Hagersville	1,223	463
Hamilton	132,706	46,717
Harriston	776	408
Harrow	713	407
Hensall	319	227
Hespeler	3,271	936
Highgate	98	114
Humberstone	595	869
Ingersoll	3,713	1,974
Jarvis	180	173
Kingsville	675	720
Kitchener	30,495	10,006
Lambeth	171	174
LaSalle	434	374
Leamington	2,227	1,991
Listowel	1,618	955
London	37,495	22,656
London Twp.	558	614
Long Branch	2,367	1,986
Lucan	307	237
Lynden	139	114
Markham	521	393
Merlin	124	147
Merritton	9,975	1,108
Milton	1,916	651
Milverton	543	295
Mimico	3,019	2,607
Mitchell	1,039	585
Moorefield	100	72
Mount Brydges	98	192
Newbury	61	90
New Hamburg	807	432
Newmarket	2,399	1,295
New Toronto	10,155	2,246
Niagara Falls	9,861	5,471
Niagara-on-the-Lake	1,158	725
North York Twp.	21,278	11,960
Norwich	538	427
Oil Springs	141	124
Otterville	161	179
Palmerston	624	457
Paris	2,055	1,301
Parkhill	387	375
Petrolia	779	867
Plattsville	257	129
Point Edward	2,296	417
Port Colborne	1,657	1,789
Port Credit	1,279	753
Port Dalhousie	1,102	779
Port Dover	798	897
Port Rowan	152	226
Port Stanley	1,235	898
Preston	4,415	1,870
Princeton	159	103
Queenston	210	89
Richmond Hill	636	527
Ridgetown	518	675
Riverside	1,399	1,941
Rockwood	209	192
Rodney	217	296
St. Catharines	26,641	9,801
St. Clair Beach	134	132
St. George	203	186
St. Jacobs	374	153
St. Marys	2,067	1,188
St. Thomas	7,500	5,019
Sarnia	11,290	5,963
Scarborough Twp.	10,105	8,554
Seaforth	1,193	574
Simcoe	2,738	1,879
Smithville	351	200
Springfield	116	128
Stamford Twp.	3,936	3,233
Stoney Creek	581	400
Stouffville	597	478
Stratford	8,059	4,885
Strathroy	1,676	1,041
Streetsville	673	247
Sutton	876	620
Swansea	2,359	2,224
Tavistock	693	325
Tecumseh	606	848
Thamesford	271	167
Thamesville	279	284
Thedford	199	192
Thorndale	185	89
Thorold	3,032	1,413
Tilbury	1,031	690
Tillsonburg	2,011	1,438
Toronto	327,032	156,481
Toronto Twp.	6,926	4,331
Wallaceburg	5,824	1,850
Wardsville	94	84
Waterdown	399	317
Waterford	478	472
Waterloo	6,801	2,644
Watford	533	333

MUNICIPAL LOADS JULY, 1950

	Peak in K.W.	Domestic Consumers
Welland	9,878	3,463
Wellesley	210	154
West Lorne	560	275
Weston	4,873	1,940
Wheatley	326	273
Windsor	52,898	27,995
Woodbridge	1,424	349
Woodstock	8,800	3,847
Wyoming	113	192
York Twp.	21,463	24,626
Zurich	195	187
(66⅔-Cycle)		
Bronte	241	400
Oakville	2,854	1,406
Trafalgar Twp.	1,105	753

GEORGIAN BAY DIVISION

(60-Cycle)

Alliston	668	502
Arthur	287	303
Bala	528	443
Barrie	5,495	2,897
Beaverton	530	375
Beeton	167	165
Bradford	564	350
Brechin	54	70
Burks Falls	134	213
Cannington	357	288
Chatsworth	170	126
Chesley	843	492
Coldwater	159	170
Collingwood	3,079	1,928
Cookstown	141	139
Creemore	222	204
Dundalk	342	236
Durham	558	526
Elmvale	295	218
Elmwood	144	94
Flesherton	148	144
Grand Valley	276	209
Gravenhurst	1,631	885
Hanover	2,180	973
Holstein	36	69
Huntsville	1,702	798
Kincardine	1,258	842
Kirkfield	36	41
Lucknow	399	360
Markdale	330	242
Meaford	1,213	851
Midland	3,362	1,926
Mildmay	215	220
Mount Forest	842	545
Neustadt	130	143
Orangeville	1,079	838
Owen Sound	7,043	4,374
Paisley	232	238
Parry Sound	659	1,330
Penetanguishene	1,310	952
Port Carling	510	278
Port Elgin	915	617
Port McNicoll	177	265
Port Perry	469	452
Priceville	18	50
Ripley	146	144
Rosseau	72	79
Shelburne	427	356
Southampton	892	673
Stayner	432	342
Sunderland	236	174
Tara	172	178
Teeswater	277	247
Thornbury	201	297
Thorton	62	72
Tottenham	178	177
Uxbridge	602	512
Victoria Harbour	165	318
Walkerton	1,333	850
Waubaushene	287	274
Wiarton	602	518
Windermere	154	79
Wingham	1,081	661
Woodville	85	130

EASTERN ONTARIO DIVISION

(60-Cycle)

Alexandria	562	526
Almonte	709	710
Apple Hill	57	74
Arnprior	1,890	1,036
Athens	158	219
Bath	81	90
Belleville	8,272	4,546
Bloomfield	229	197
Bobcaygeon	333	435
Bowmanville	3,330	1,314
Braeside	254	101
Brighton	669	533
Brockville	7,224	3,469
Cardinal	542	419
Carleton Place	2,219	1,209
Chesterville	645	307
Cobden	233	208
Cobourg	3,280	1,617
Colborne	335	302
Deseronto	426	441
Finch	171	133
Frankford	313	262
Hastings	219	301
Havelock	275	329
Iroquois	417	339
Kemptville	617	440
Kingston	17,539	9,223
Lakefield	702	447
Lanark	175	218
Lancaster	70	132
Lindsay	3,986	2,527
Madoc	487	349
Marmora	196	287
Martintown	70	72
Maxville	199	200
Millbrook	165	220
Morrisburg	640	497
Napanee	1,826	1,026
Newcastle	403	256
Norwood	241	256
Omemee	188	204
Orona	170	207
Oshawa	22,225	7,650
Ottawa	39,604	16,849
Perth	2,212	1,282
Peterborough	18,408	8,744
Picton	1,775	1,268
Port Hope	3,772	1,733
Prescott	1,418	865
Renfrew	1,230	1,581
Richmond	118	119
Russell	137	128
Smiths Falls	3,828	2,318
Stirling	473	336
Trenton	6,039	2,328
Tweed	575	370
Warkworth	156	162
Wellington	508	379
Westport	177	173
Whitby	1,902	1,232
Williamsburg	131	96
Winchester	656	334

THUNDER BAY SYSTEM

(60-Cycle)

Terrace Bay	605	212
Fort William	20,674	8,715
Nipigon Twp.	516	343
Port Arthur	21,970	7,677
Red Rock	320	162

NORTHERN ONTARIO PROPERTIES

Nipissing District
(60-Cycle)

Latchford	47	103
North Bay	5,864	3,980

Patricia District
(60-Cycle)

Sioux Lookout	586	650

Sudbury District
(60-Cycle)

Capreol	597	482
Sudbury	11,566	9,347



I chatter, chatter as I flow
To join the brimming river,
For men may come and men may
But I go on for ever.

—Tennyson, "*The Broo*

HYDRO News



HARVEST

VOL. 37 OCTOBER 1950 NUMBER 10

PLEASE SAVE ELECTRICITY!

MAINTAIN STEADY EMPLOYMENT AND PEAK PRODUCTION

Power demands continue to soar. All consumers are urgently requested to avoid wasting electricity—housewives, factory workers, office workers, merchants, farmers—please do your utmost to save electricity at all hours of the day and night.

The co-operation of all consumers is needed. Turn switches OFF when not required. Save electricity whenever and wherever possible.

R. L. Hearn
General Manager

Robert H. Saunders
Chairman

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

THE COMMISSION

ROBERT H. SAUNDERS, C.B.E., K.C.,
Chairman

HON. GEORGE H. CHALLIES, M.L.A.,
First Vice-Chairman

W. ROSS STRIKE, K.C.,
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COVER PHOTOS

CAPTURING the feeling of the season of Harvest and Thanksgiving, this month's front cover photograph is the work of J. B. Helling of the Commission staff. It is also symbolic of the role of Hydro in relation to farm life and agricultural production. Another arresting illustration, showing Kakabeka Falls, is featured on the back cover. This photograph was taken by Commission photographer Bob Armstrong.

Volume 37 Number 10

October, 1950

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Logging operations on the headpond at Hydro's Tunnel Generating Station on the Mississagi River. Logs contained in the log chute guide booms are being poled to the mouth of the 890-foot long chute which carries them down to the tailrace.

Autumn Reflections

THANKSGIVING in Canada for many years was observed in November — coinciding with the American holiday. The new date, in every way, is more appropriate. In this northern clime, October rather than November is associated with the season of harvest-time rejoicings. October, too, is usually one of the most delightful months of the Canadian year. The country is a painter's dream and in town and city there is an air of enchantment and romance.

Autumn is the season for which Nature seems to have reserved the perfection of her artistry. As summer ends, the woods put on the glowing robes of festal celebrants. In the southern regions, maple, oak, beech, ash and elm contribute to a riot of colors — red and purple, russet and gold. As the leaves of the sumac turn, the tufted crimson fruit burns like the heart of a fire amid the flaming foliage. Along the less travelled roads and woodland paths, the bursting orange pods of the climbing bittersweet, with their brilliant scarlet centres, contrast harmoniously with the blue-black fruit of the nannyberry. Plants and shrubbery of varied coloring carpet dell and glade.

In "Old Ontario," the sturdy plowman turning the furrow, the sleek cattle still at pasture, the bronzed farm lads loading the trucks with the fruits of orchard and field are living cameos carved in relief against the changing colors of field and sky. And the magic of the autumn season is not confined to the country. The drabest and most commonplace urban localities take on a new look, like a plain face made unexpectedly attractive by a winning smile.

One of the characteristics of beauty is the inspiration it gives to thought and meditation. As we view the glories of autumn we experience a deep sense of thankfulness that no destroying hand has been laid upon our land. We have felt the impact of war. We have given generously of our manhood and of our material resources in the cause of Freedom; but our country has never been ravaged nor have our cities been destroyed. Here at home, we have lived in peace, working together constructively to build up the prosperity we now enjoy. We must keep on with the job, strengthening ourselves and others, trusting by our individual actions as well as by our national efforts to make a still more favorable impression upon other freedom-loving peoples less fortunate than our own.

We in Hydro, whether we belong to the parent organization or to the numerous family of Hydro municipalities, are happy in the knowledge that our great public service organization has contributed so much to the development of Ontario and the welfare of its people. And we believe that our fellow citizens are proud of Hydro, too. "Your Hydro" — a term frequently employed by Chairman Saunders in his public addresses and broadcasts — is no meaningless phrase. The Commission was created as the result of popular agitation. Its large-scale enterprises have been carried out entirely in the interests of the people of the province, and its electrical services are designed to meet the needs of all classes of customers.

The tremendous effort exerted by Hydro to meet these needs is reflected by the increase in power supplied by the Commission over the past decade. In December, 1940, the Commission was supplying a total of 1,718,600 horsepower to customers on its Southern Ontario System. By September of this year the supply had increased to 2,671,540 horsepower. This phenomenal increase of 952,940 horsepower represents more than twice the combined power requirements of the cities of Windsor, London, Hamilton, Peterborough, Kingston and Ottawa. And still more power will be added during the next few months.

It is felt that the outstanding achievements of Hydro engineers in providing more and more power for consumers should be given statistical emphasis here, since a true perspective of the Commission's accomplishments is sometimes obscured by the recent unprecedented increase in the demand for electricity. Ontario has been going ahead by leaps and bounds, far beyond the anticipations of its most enthusiastic citizens. Since 1947, the population of the province has increased by 323,000. Some 70,000 new homes have been built. Approximately 700 new industries have been established, and the value of industrial production has increased by an estimated 1½ billion dollars. Besides looking after the rapidly expanding power requirements of industrial, commercial and domestic customers, the Commission has been called upon to carry out a vast program of extension in the rural field. Since 1947, no less than 91,500 new rural customers have been added, while the value of agricultural production has increased by $400,000,000.

Indications last June pointed to Hydro being in a position to meet all anticipated demands for power this fall and winter. The international situation has, however, called for a sudden and dramatic acceleration in the production of essential materials for the United Nations, and the maximum primary demand for power in Southern Ontario during the past few weeks has been as much as 400,000 horsepower higher than a year ago. It is, therefore, necessary for all Hydro consumers in home, office and factory and on the farm to save electricity. By conserving power, they can help maintain not only maximum production and employment, ensuring the continued march of progress in Ontario, but also to further the cause of freedom and true democracy.

While many problems remain to be faced and solved at home, there is no question that Canadians live in a particularly favored country. Thanksgiving has passed, but our gratitude for the benefits and blessings we enjoy should endure.



Liftlock City

by
Grace J. Carter
News Editor



LIFTLOCK City, as Peterborough is popularly called, is picturesquely situated on both banks of the Otonabee River, 72 miles northeast of Toronto.

Primarily a manufacturing centre, which has been served by Hydro since 1914, it is also the key point of the Kawartha lakes, a summer playground which attracts thousands of visitors each year. Fishing ranks high as one of the attractions with swimming, boating, golfing and hunting following very closely, and during the winter months the numerous hills that dot the district provide excellent skiing facilities.

Peterborough's history goes back a long way. In fact, according to the records, it goes back to 1615, when Samuel de Champlain, French explorer, leading an Indian war party against the Iroquois followed the course of what is now the Trent Valley canal system which connects Lake Ontario with Georgian Bay by means of a series of small locks and canals between a number of large lakes.

In 1820, Adam Scott journeyed from Cobourg to the present site of Peterborough and established a grist mill, developing power from the Otonabee River by means of an undershot wheel. It is reported that until 1824, Mr. Scott and



Peterborough — Hub of Kawarthas Celebrates Century of Progress

his family were the only inhabitants in the area.

Shortly after this, however, the British Government began giving land grants in the Peterborough district to veterans of the Nelson Navy and Wellington's Army for their service to the Crown in the Napoleonic wars. Many of these men settled with their families in this rich agricultural area. In 1825 the Hon. Peter Robinson, English Administrator, brought more than 2,000 selected Irish immigrants to settle in the area. Two years later the name Peterborough was chosen to honour Peter Robinson who had played such an important part in the settlement. Prior to this, the site had been known as Indian Plain or Scott's Landing. In 1850, in accordance with the Baldwin Act of Upper Canada, Peterborough was incorporated as a town, and in 1905 it was incorporated as a city.

Unquestionably the Otonabee River has played an important part in Peterborough's history. Draining a large section of Central Eastern Ontario, it has a fall of some 280 feet in a distance of ten miles above the city. A chain of lakes acting as reservoirs maintains its level and its course is dotted with dams and locks built for navigation and the development of power.

The famous liftlock at Peterborough on the Trent Valley Canal has a lift of 65 feet and a locking time of only 12 minutes. It was opened for navigation on July 9, 1904, and is said to be among the largest in the world. At the present time it is mostly used for pleasure craft rather than commercial traffic as was anticipated when constructed.

Among First To Use Electric Light

Peterborough claims to be among the first communities to use electric light. In 1884, a generator, privately owned, was installed in the Hazlitt Saw Mill at the foot of London Street. This operated 25 open arc lights. The distribution system consisted of five miles of wire and the lights were placed in the principal business establishments, as well as on some of the streets. In 1914 the electrical system was purchased by the Peterborough Utilities Commission, with T. F. Matthews as Chairman; Robert Hicks and W. H. Moore as commissioners.

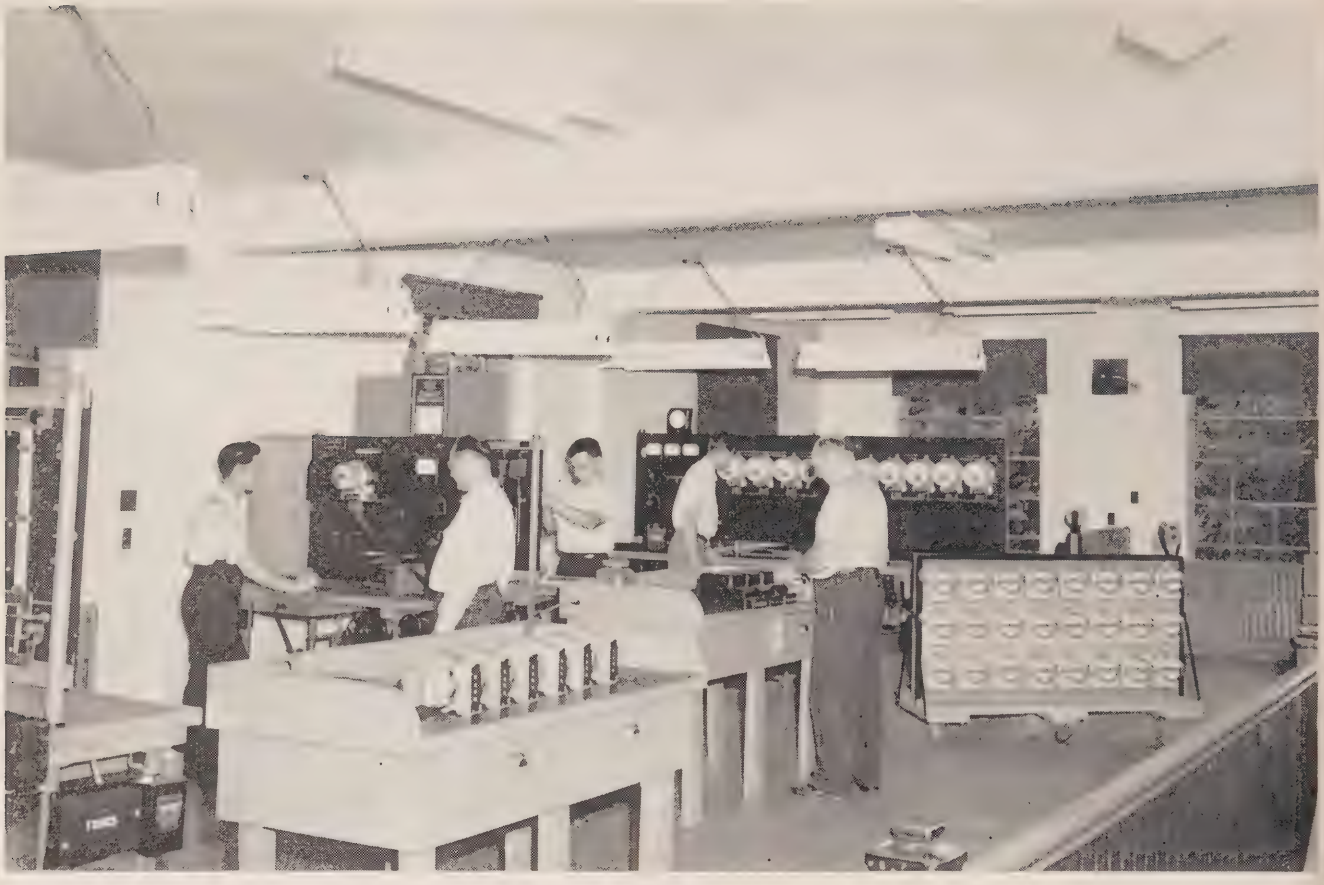
At that time the load was 2,700 horsepower as compared to the present load of 25,000 horsepower. In 1915 there were 3,900 customers and now there are 9,189 domestic; 1,245 commercial and 1,206 industrial users. There are over 80 miles of transmission lines and six sub stations. Since the inauguration of Hydro in this enterprising municipality of some 36,000 people, there has been a steady reduction in the cost of servic



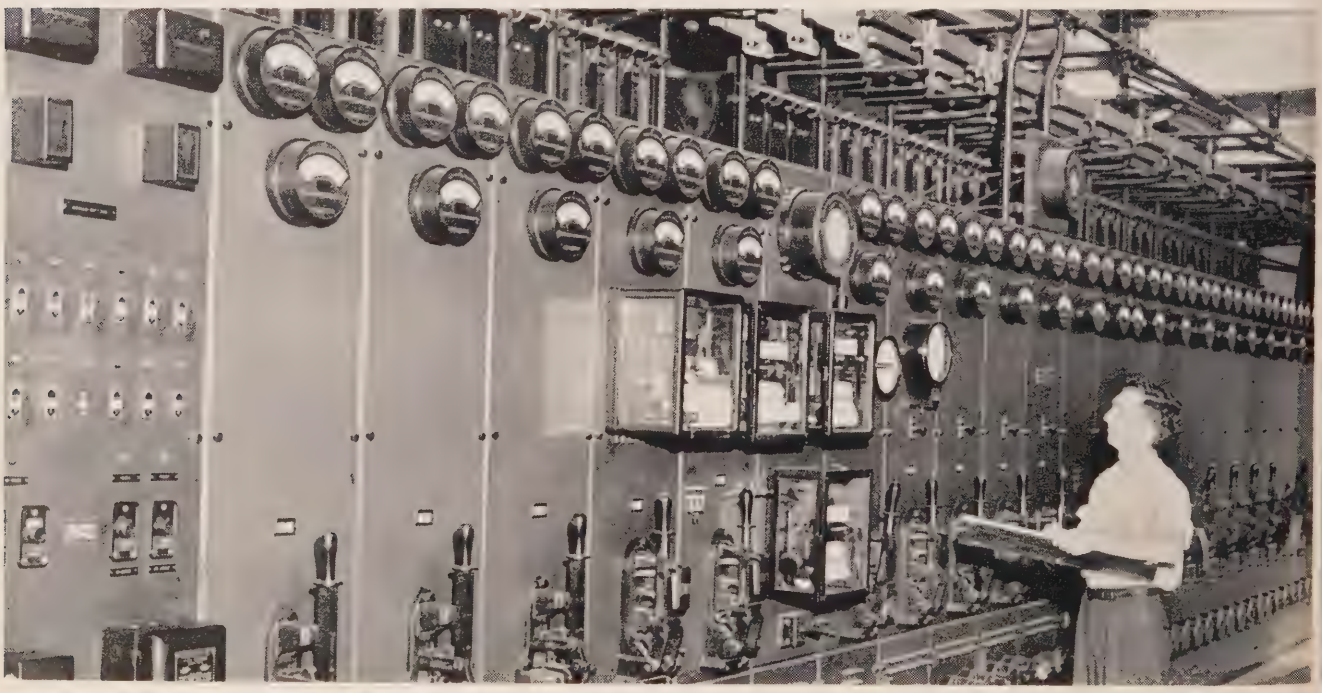
JAMES HARRISON (left), Chief Operator, and R. L. Dobbin, General Manager, Peterborough Utilities, feed one of the deer at Moore Park.



BEAUTIFULLY ILLUMINATED FOUNTAIN at Moore Park, which is owned and operated by the Utilities Commission. This 25-acre park is situated at the filtration plant on Lakefield Road.



THIS IS Peterborough's spacious, up-to-date meter room where approximately 2,300 meters are inspected and repaired annually. Meter testers in this group are: Gerald Browson, Frank Worsencroft, Foreman; Roland Krant, Hugh Brightman and Alfred Dawson.



MERTON D. CUNNINGHAM, Operator, takes a reading at Peterborough's main substation. This station has four 3,000 kilowatt transformers and is part of the office building on Aylmer Street. There are five other smaller substations in this busy municipality.



THIS SHOWS PART of Peterborough's fleet of 21 trucks and some of the line crew. Included in the group are Fred Leach, Foreman; Bev. Callan, Trouble Shooter; Sam Watson and Ross Hopkins, Construction Foremen; and H. G. Beatty, Superintendent.

to customers. In 1916, with an average domestic monthly consumption of 13 kilowatthours, the average cost was 6.1 cents per kilowatthour. At the present time, the average monthly consumption of domestic users is 306 kilowatthours, and the average net cost per kilowatthour is 0.84 cents.

A short time ago the local commission completed its up-to-date meter room in the main office building on Aylmer Street. In these spacious quarters about 2,300 meters are inspected and repaired annually. It was proudly pointed out to *Hydro News* that there is a Government test board for ten meters; two single meter test boards and one demand board. The equipment is modern and efficient and the eleven members of the staff are kept busy testing electric, gas and water meters. A comprehensive card system of filing tells the operator at a glance just what meters are next on the list. Electric meters are tested at least every six years.

Serve On The Commission

The present Peterborough Commission comprises Gordon S. Matthews, Chairman; G. A. Macdonald and Frederick Hills, Commissioners. In this connection it is interesting to note that two men—father and son—have occupied the position of Chairman for a total of 39 years since the local commission was established in 1902. Mr. Matthews, the present Chairman, has held this office for approximately 23 years, and is the son of the late T. F. Matthews, who held the chairmanship from 1902 until 1919.

One of the unique features of the Utilities Commission which takes care of the city's electrical service, water system and gas, is its successful operation of Moore Park. This park, consisting of 25 acres of land situated at the filtration plant on Lakefield Road, provides a quiet sylvan retreat for any passerby. Running alongside the river, its well-kept lawns and miniature forest have some 20,000 trees of practically every species found in Canada. The park also boasts of a small zoo whose "residents" include some deer, a bear, a monkey, guinea pigs, racoons and birds of all descriptions. Located close to the highway is an attractive fountain which is beautifully illuminated at night. This park was named after W. H. Moore who was Chairman at the time the project was started.

Observe Centenary

All these attributes associated with progressive enterprise, in evidence in the early pioneer days of the district, find full and vigorous expression today as Peterborough observes its centenary. Its citizens can point to an enviable record of achievement which reflects the all-important impetus provided by low-cost Hydro power. Today, this city occupies a proud and pre-eminent position among Ontario's thriving industrial communities. This is fully substantiated by the fact that in Peterborough one finds such names as Canadian General Electric Com-



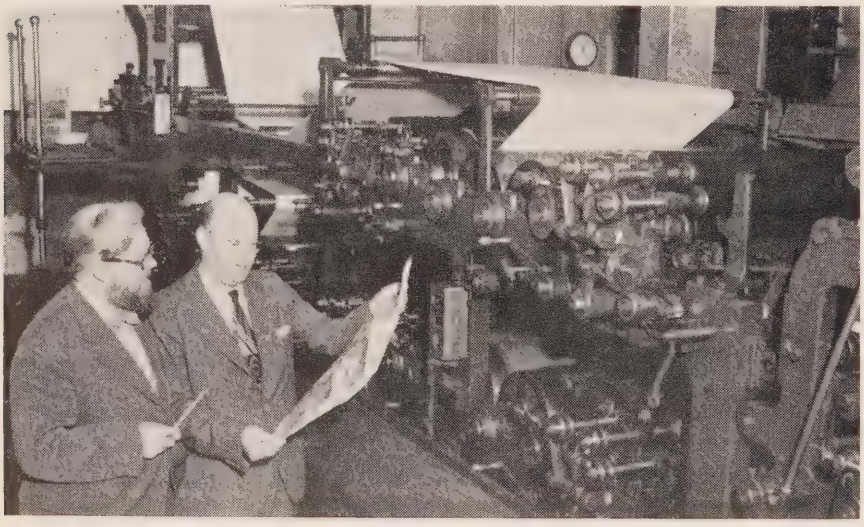
WHEN THIS PICTURE was taken Howard Clegg, Accounting Secretary, was talking things over with Leslie Dyer, Margaret Lundy, Elvira Magee, Helen Leckie and Cora Clark.



THE GIRLS in the Billing Section were hard at it when this photograph was taken. Left to right they are: Mrs. Catherine Crellin, Margaret Brett, Floris Campbell and Betty Dickinson



FINAL INSPECTION of 10 horsepower outboard motors. These motors are shipped all over the continent and undoubtedly help to provide many pleasant hours during vacation time.



EDITOR ROBERTSON DAVIES (left) and Managing Editor G. Wilson Craw look over some important copy as it comes off the rollers in the press room of the *Peterborough Examiner*.

pany, Limited; DeLaval Company Limited; Outboard Marine and Manufacturing Company of Canada Limited; Brinton-Peterborough Carpet Company Limited; Canadian Nashua Paper Company Limited; Quaker Oats Company of Canada Limited (said to be the largest cereal millers in the British Empire); Western Clock Company Limited; Dominion Woollens and Worsteds Limited; Peterborough Lock Manufacturing Company Limited; Canadian Raybestos Company Limited; Peterborough Canoe Company and many others.

Many Fine Structures

Other indications of the city's growth and stability are its many fine homes, schools, churches, libraries, hospitals, theatres and other buildings. Some of its recreational facilities come under the Peterborough Recreation Commission comprising ten members who work in conjunction with the Parks Committee and Service Clubs. The city has 15 parks, 10 playgrounds and 16 ice skating rinks.

Like Rome, Peterborough is said to be built on seven hills, the highest of which is Armous Hill located near the lift locks at the east end of Hunter Street. At these high spots a commanding view may be obtained of the surrounding farm area with its rolling terrain which provides excellent grazing facilities for sheep and cattle.

Two Newspapers

This well-planned and attractive city has two newspapers—the Peterborough Examiner and the Peterborough Weekly Review.

When visiting this friendly municipality the tourist is well advised to include the cruise of more than 240 miles through the Kawarthas which, incidentally, means "bright waters and happy lands."



"Junior feels that blowing out the candles is such a waste of breath."

May Not Require Restrictions But Imperative To Save Power

Hydro Chairman Saunders Discusses Dramatic Change In Demand Picture Since Last June

CONDITIONS existing on June 28 when the Des Joachims development was opened and placed in initial operation warranted the belief that, barring unforeseen circumstances, Hydro would be able to meet all anticipated demands for power this Fall and Winter.

In making this observation at a meeting of District No. 2, Georgian Bay Municipal Electric Association at La Cave on September 8, Hydro Chairman Robert H. Saunders directed attention to the sudden and unprecedented demands for power since last June. This situation, he pointed out, reflected the accelerated production of essential war materials for the United Nations' forces.

The Chairman stated, however, that it was his hope—and there were grounds on which to base that hope—that power restrictions or cut-offs might not be necessary this Fall or Winter in any section of the Province. At the same time, he made it clear that it was imperative for all classes of customers in factories, offices, homes, stores and on the farms to save electricity in every way possible.

Mr. Saunders stated that in Ontario people had naturally become accustomed to flick the switch and forget where the power came from and to forget also that power was vitally associated with the production of essential materials and the maintenance of maximum employment.

Increase of 12 Percent

Citing figures to show how demands for power had increased, the Chairman said on Wednesday, August 8, for example, the demand was 34,702,000 kilowatthours and one month later, on September 6, it was 38,909,000 kilowatthours. In other words, there had been an increase of some 12 percent.

In the Niagara area alone, the speaker said, where there was a heavy concentration of industry—industry that was extremely vital to the war production of both Canada and the United States—there had been an increase of 1,400,000 kilowatthours a day during the second half as compared with the first half of August. Daily energy demand in the area, he pointed out, was actually 2,000,000 kilowatthours greater than that of one year ago.

The Chairman pointed out that the primary demand was still climbing. There had been an abnormal growth of industry, he said, as well as an increase in population. There had also been a tremendous home building program in this province. "We used to think," he said, "that a house took one kilowatt, but now it looks more like 1½ or 1¾."

New Capacity

He pointed out that in the past two years new capacity had been brought in to the extent of 5,448,000 kilowatthours, and said that he believed the Commission would be able to carry through by taking full advantage of the provisions of the at-will and interruptible contracts. It was hoped, he reiterated, that the voluntary savings in power could be diverted to the benefit of the industrial users who were actually providing the tools of war for the United Nations.

On the brighter side, Mr. Saunders went on to point out that the Des Joachims plant was producing some 240,000 horsepower of its total capacity of 480,000 horsepower and it was hoped that by October another unit (60,000 hp) would be in service. It is expected, he said, that Chenaux would come in in December of this year with possibly 80,000 horsepower. It was also hoped that the balance of the Des Joachims output of 180,000 horsepower would be available before the end of January next year.

Tribute to Engineers

Mr. Saunders paid tribute to the Hydro organization as a whole. He said he was proud of the fact the majority of engineers employed by the Commission were born and educated in Canada. Of the 890 engineers in Hydro service, 820 were Canadians, he said. Also that 55 of Hydro generating plants had been de-



DISTRICT NO. 2 O.M.E.A. executive for the ensuing year are, left to right: Robert Butler, Owen Sound, Secretary; H. G. Robertson, Barrie, R. W. Jupp, Huntsville; W. E. Theaker, Paisley, Chairman; Walter Dixon, Arthur, Honorary Chairman; C. G. Spencer, North Bay; Joseph Bull, Collingwood. Other executive members are S. R. Sarjeant, Orillia; C. J. Halliday, Chesley; Lt. Col. A. A. Kennedy, Owen Sound; W. J. Cross, Hanover; R. S. King, Midland.

signed and built by Hydro engineers. The Des Joachims plant and the Queenston-Chippawa development, now known as the Sir Adam Beck Generating Plant No. 1, were designed and built by Hydro engineers.

In closing, he pointed out that it was believed that adequate resources were available to meet the needs of Northeastern section of the province, during the coming fall and winter months.

During the afternoon session which was held in the Council Chambers at North Bay, A. W. Manby, Assistant General Manager—Administration, also discussed the unprecedented power demands. He spoke of the increased consumption in the homes and the increase in the number of homes. As a result of these very large increases, Mr. Manby said, the Commission had been faced with the necessity of making reductions to direct consumers, particularly in the Niagara Peninsula which obviously represented a serious curtailment of essential materials. He went on to point out that it was very necessary to conserve power and he was asking for the co-operation and education of the people in the various municipalities to conserve power in order that restrictions might be avoided.

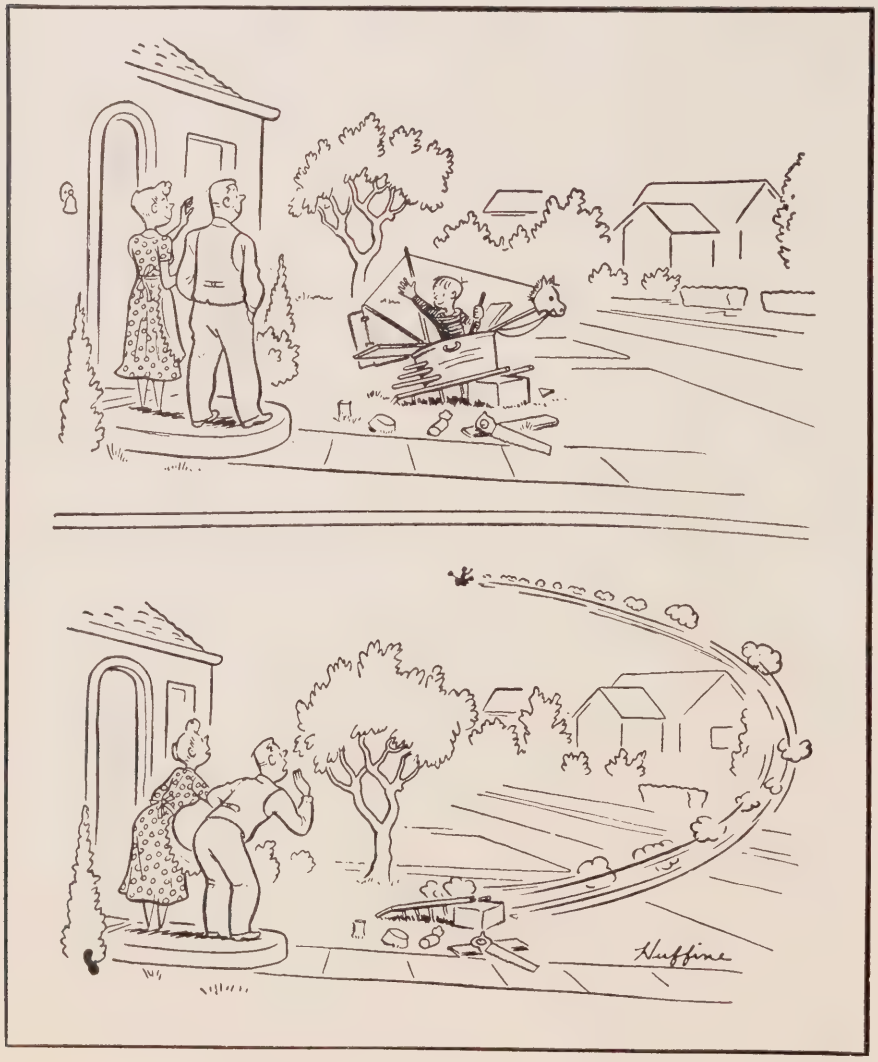
Regional Offices

M. J. McHenry, Director of Consumer Service Division, spoke briefly on the nine regional offices throughout the Province and suggested that the municipalities continue to make full use of their services. He also told the convention that in the revision of rates it had been found necessary to raise those rates in only 11 of the 61 municipalities in the Georgian Bay area. In similar revisions elsewhere in the Province it was found that increases were required in about 45 percent of the municipalities.

During the day papers were given by W. M. Salter, General Manager, Barrie Public Utilities Commission; H. R. Graham, Manager, Northeastern Region; D. G. Ferguson, Manager, Georgian Bay Region; C. E. Crease, Consumer Service Engineer, Georgian Bay Region.

Industrial Progress

G. F. Hutcheson, Past President and Secretary of the O.M.E.A., drew attention to the industrial progress of Ontario and to the tremendous growth of Hydro. It was his opinion, he stated, that Ontario was just at the commencement of a great era which he felt would be continued for the next 25 years or so. It behooved the managers and superintendents of the public utilities, he said, to take their part in the great industrial growth of the Province.



—Reprinted from "Cosmopolitan"

Welcome To Delegates

Mayor T. M. Palmer of North Bay welcomed the 200 delegates, which included about 50 ladies. He expressed the hope that it would be a profitable as well as a pleasurable convention and that they would return home having made new friends and having a new concept of the great Northern Ontario.

At the evening banquet Joseph Caulder, Director of Silverwood's Western Dairies Limited, gave an interesting travelogue on his recent visit to the continent.

D. P. Cliff, President of the O.M.E.A., said that he was pleased to see so many ladies at the convention. It reminded him of "the Hydro family," and he expressed the hope that the ladies would eventually go to all the meetings. He spoke of the three sections of Hydro—the H.E.P.C., the A.M.E.U. and the O.M.E.A., and if they co-operated one with the other that each unit would do better in their respective jobs.

During the business session the following resolutions were passed:

RESOLVED that the O.M.E.A. executive be requested to set up a committee to formulate uniform rules and regulations for the various districts which would be forwarded later to these districts for their approval.

RESOLVED that the H.E.P.C. be requested to see that the publishing and distribution of the booklet, "Guidance to Commissioners," be made.

After a question and answer period the following officers were elected for the ensuing year: Honorary Chairman, Walter Dixon, Arthur; Chairman, W. E. Theaker, Paisley; First Vice-Chairman, S. R. Sarjeant, Orillia; Second Vice-Chairman, H. G. Robertson, Barrie; Secretary-Treasurer, Robert Butter, Owen Sound; Directors: C. J. Halliday, Chesley; Lt. Col. A. A. Kennedy, Owen Sound; Joseph Bull, Collingwood; W. J. Cross, Hanover, R. S. King, Midland; R. W. Jupp, Huntsville; C. G. Spencer, North Bay.

Thursday afternoon, while the business session was in full swing, the ladies were taken on a tour of the city ending at the North Bay Golf Club for afternoon tea. The following day buses took the entire convention to the La Cave Development where luncheon was served.

Congratulations were heartily extended to the North Bay Hydro-Electric Commission for the excellent way in which they handled the District No. 2 convention.



DISTRICT 2 MEETING

MORE THAN 50 ladies were present at the Georgian Bay O.M.E.A. meeting held at North Bay on September 7 and 8. The top photograph shows a section of the ladies' table at one of the luncheons. In the centre photograph we have George Spencer, (left) North Bay; Mrs. Jessie M. Koeritz, Priceville; Mrs. Beaton and Mayor W. S. Beaton of Sudbury. In the lower left picture are Thomas Fells, D. W. Jeffs and Duncan Kennedy, all of Wingham. Lower right are D. G. Ferguson, Georgian Bay Region; Albert G. Jennings, East York Twp., and H. R. Graham, Northeastern Region.







Report on

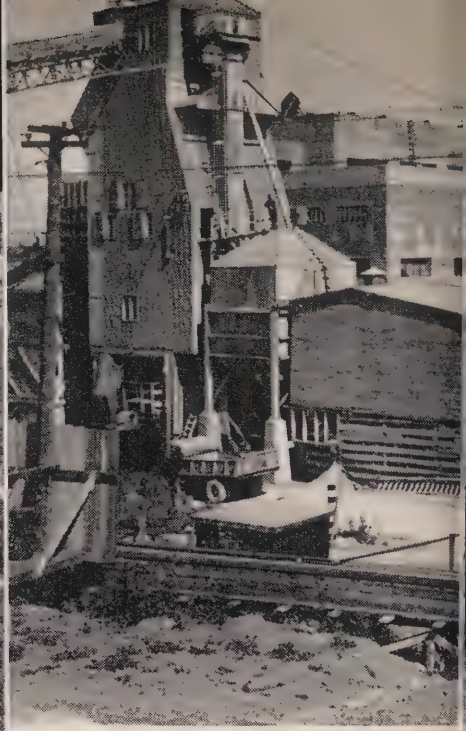


THIS AERIAL VIEW of Hydro's Chenaux Development accentuates the striking natural beauty of the Ottawa Valley. Nearing completion, the powerhouse structure, centre, forms an integral part of the main dam. The new Limerick Island and Portage dams are also visible in the background.

★ ★ ★

LIMERICK ISLAND CONTROL DAM, which is 1,100 feet long, spans the discharge channel of the Ottawa River. Equipped with sluiceways and stop-log sluices, this structure, with the Portage dam, will discharge river flow in excess of plant needs and control level of forebay.





LOCATED PARTLY on the Ontario side of th the new Chenaux powerhouse will be a

by

Dennis A. Dack
Hydro News

BEFORE the end of this November, the first of the eight generators of the Chenaux power development on the Ottawa River is scheduled to be in service—less than three years after the project was started, and almost a month ahead of schedule. This will be followed at monthly intervals by two others, each delivering 14,900 kilowatts (20,000 hp) of much-needed power to the Southern Ontario System.

At the present rate of progress, this plant is likely to be operating at a ful capacity of 119,000 kilowatts (160,00(hp) by the early summer of 1951.

Approximately 1,300 men are employ ed at this project which is located a Portage du Fort, 10 miles north of Ren frew and 60 miles downstream from th Commission's Des Joachims plant, whicl was officially opened last June and whicl is now delivering power from five units

The Chenaux power developmen differs in certain ways from Hydro' other Ottawa River projects. When th initial plans for harnessing the wate of the Ottawa at this point were first con sidered, it was realized that the Commis sion's engineering and construction staf would be fully employed on other de velopments for some time to come. I was for this reason that the firm o H. G. Acres and Company, Limited, en gineering consultants, was retained t design the development at Chenaux Actual construction of the whole projec is being carried out by the Pentagon Con



rn structure and will house the eight generating required to produce 160,000 horsepower.

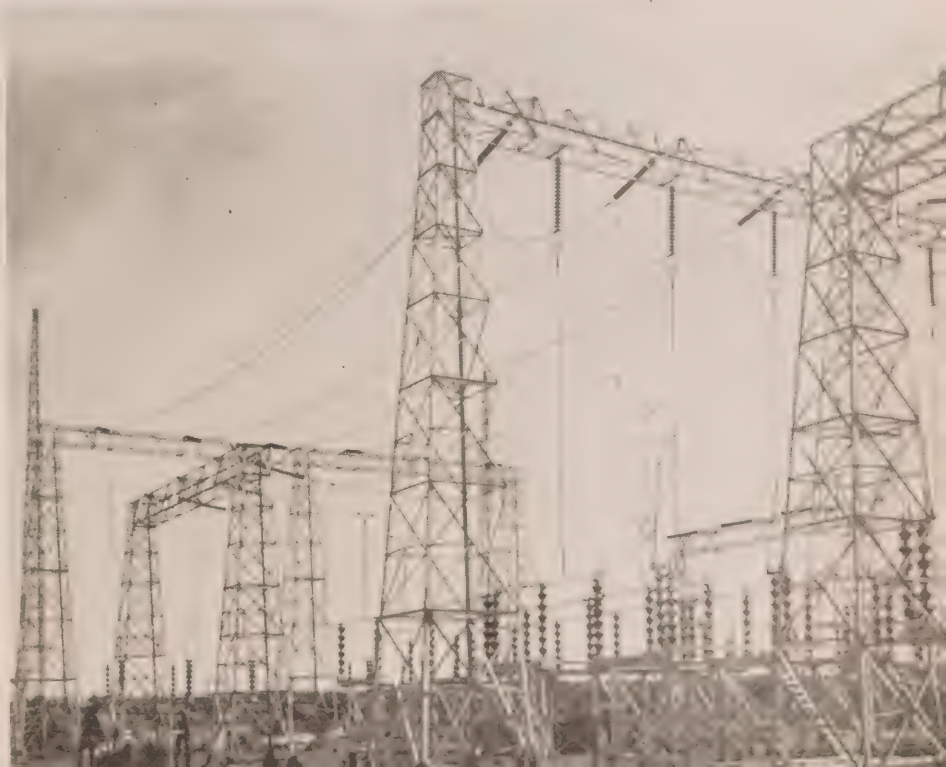
CHENAUX



TAKING ITS NAME from the nearby Quebec village, Portage du Fort dam is 1,400 feet long. This structure, comprised of bulkhead and stop-log sluice sections, will close off the eastern channel which is in Quebec. With Limerick dam, it will control the 40-foot operating head.

★ ★ ★

WORK IS ALSO PROGRESSING on the 230-kv. switching area at Chenaux. Beneath the steel towers are the necessary busses and disconnecting switches. Two oil circuit-breakers will be installed here before the first unit of the new development is placed in operation during November.



struction Company, Limited, under the general supervision of the H.E.P.C. engineering staff.

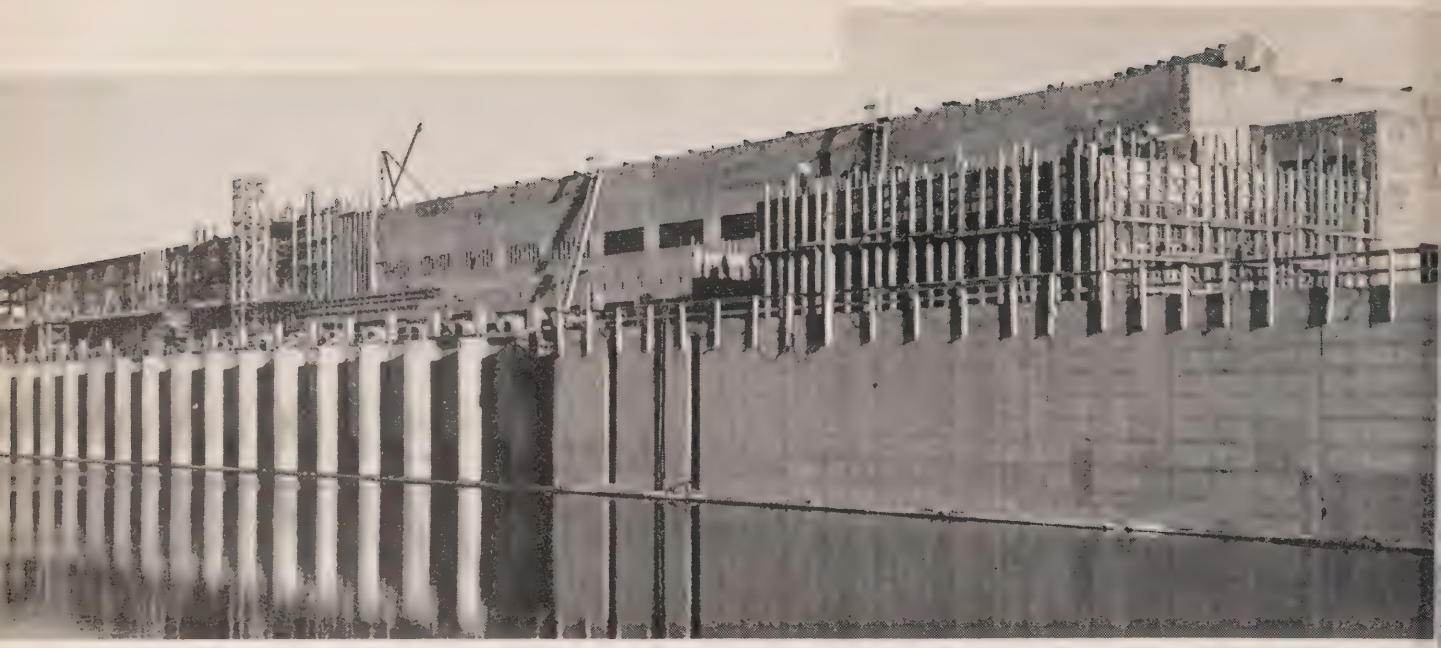
Two features incorporated in the planning of the main dam and powerhouse have been the elimination of penstocks, and the time consuming work of excavating the river bed to provide a tailrace.

The Chenaux powerhouse has been built on the natural river bed with the main dam holding back a headpond with an area of approximately 4,600 acres and creating an operating head of 40 feet. The present water level in the headpond is 264.5 feet, the final regulated water level will be 285.0 feet.

Water is provided to each turbine by three 15-foot wide intake openings controlled by electrically-operated steel gates. When it is time to switch the generators ino action, the gates will be raised and water will rush into the individual scroll cases for each turbine. In place of the usual metal type, each scroll case is constructed entirely of reinforced concrete. This casing feeds water through the control vanes to the propeller-type turbine, designed for this comparatively low head.

To date, eight powerhouse units are in various stages of completion. Two turbines have been completely installed and a third is 50 percent complete. The first three generators are in the process of being assembled and are at stages of 80, 60, and 10 percent completion respectively.

Chenaux, taken from an old French word for channel, aptly describes the one-time swirling waters of this section of the Ottawa River. Now the water has been effectively plugged or diverted by an 80-foot high main dam stretching for 1,400 feet. Limerick Island dam



REFLECTED IN the calm water of the headpond, the main dam and powerhouse structure makes an impressive pattern as it nears completion. Intake gates, which will eventually operate with a 40-ft. head, are seen at left, while wooden pouring forms await the pumpcrete at upper right.



STUDYING BLUEPRINTS of the Chenaux development is the Head Office staff of engineers. Seated, left to right, is A. E. Kobold, Electrical Project Engineer, and J. L. Soare, Project Engineer. Standing, left to right, can be seen J. T. Cornish, Assistant Electrical Project Engineer; W. Chong, Junior Engineer; J. A. C. Bowen, Assistant Project Engineer. Inset at upper left is Archie Graham, Assistant Electrical Project Engineer.

1,100 feet in length, the 1,400 foot dam at Portage du Fort and a 100-foot side dam just north of this Quebec village. All dams are complete, except for minor additions, and only 5,000 out of a total of 115,000 cubic yards of concrete remains to be placed to complete the powerhouse structure.

Hydro News learned that already a total concrete yardage of 230,000 has been pumped into the four Chenaux structures—sufficient to build a standard 4-foot sidewalk stretching for 870 miles. Something like 9,500,000 board feet of lumber, or 380 carloads, equivalent to a train over 3 miles long, already has been used, together with more than 8,000 tons of steel.

As is true of any major construction job of this type, the Chenaux development posed certain problems. Excavating more than 884,000 tons of rock and earth was little more than routine to the construction engineers. Raising a nine-span main line railroad bridge which spanned a section of the headpond, however, proved to be more complicated. In order to clear the water at peak flow, the bridge had to be raised five feet by the Canadian National Railway. This was accomplished, section by section, with a minimum loss of time and without disrupting normal traffic. Approximately three miles of interprovincial highways were also re-located in the early stages of the operation.

With power demands in Southern Ontario continuing to soar, at an unprecedented rate, an all-out effort is being maintained by the Commission's engineers to hasten completion of Chenaux and other Hydro projects, now under construction or in partial operation.



SEEMINGLY ENJOYING his job, Frank J. Dobson holds the responsible position of Resident Engineer for Chenaux project.

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THIS PHOTO of Eugene Fagan, Divisional engineer, Powerhouse Section, was taken in the tailrace section below powerhouse.

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PROJECT MANAGER William L. Fraser is a busy man these days as Chenaux gets ready to deliver power from the first unit.



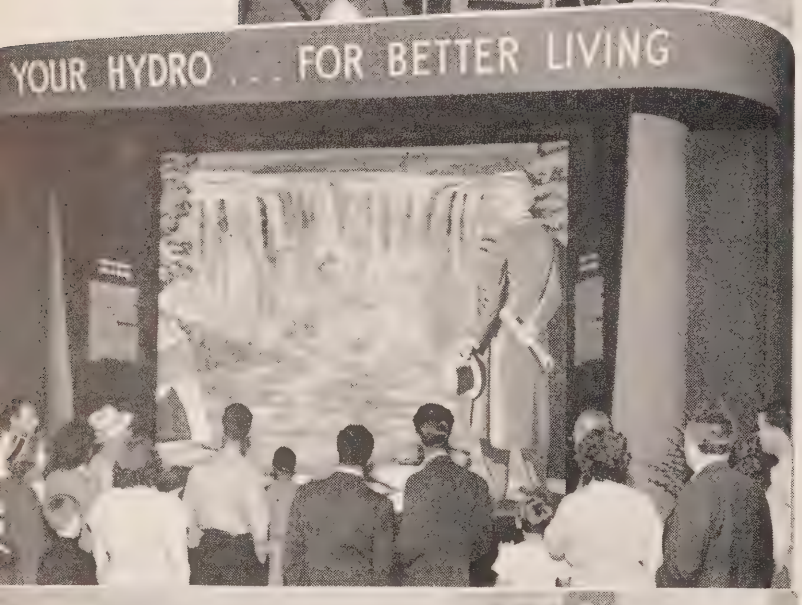
FIELD ELECTRICAL ENGINEER, Tadeusz Tworkowski, is among the key personnel who helped to supervise Chenaux construction.



C.N.E. 1950









DOMINATED by a large double mural portraying the late Sir Adam Beck, "Father of Hydro," viewing a symbolic background panorama of Hydro and some of the many uses of electricity, Ontario Hydro's C.N.E. exhibit this year featured as its theme "Your Hydro For Better Living."

In officially opening the Commission's exhibit, Hydro Chairman Robert H. Saunders stated that every effort had been made to design an educational display which would inform the people as fully as possible on the operations, problems and progress of their Hydro.

Closely associated with the main theme was the industrial display, which spotlighted the increase in the dollar value of production by Ontario industries, and the growth in the number of manufacturing concerns, through the increased use of low-cost power. The display showed a chart of Hydro's 68 generating stations, and how they serve industry throughout the province.

Indicating how the increased average use of electricity per consumer had resulted in a decrease in cost, the domestic and rural displays included photo murals showing old and new electrical appliances, and depicted the benefits and greater efficiency resulting from improvements in design. Statistics directed attention to the fact that the people of Ontario use more appliances than those of any other province. For instance, out of the 623,000 households in Canada using electric ranges, Ontario accounts for 400,000 of this total.

The municipal display centred around an animated

THIS YEAR'S Canadian National Exhibition, opened by Rt. Hon. C. D. Howe, Minister of Trade and Commerce, set a new attendance record. Illustrations on this page show, TOP RIGHT, the main entrance to the Ontario Hydro exhibit; TOP LEFT, Hon. C. D. Howe, left, R. C. Berkinshaw, C.N.E. President, and Ontario Premier Leslie M. Frost, as the "Ex" was officially declared open. A dominating feature of the Hydro display was the large double mural of the late Sir Adam Beck against a symbolic background. In another section of the Hydro exhibit, the gentleman on the bicycle (BOTTOM) is shown attempting to keep a 100-watt lamp illuminated. The demonstration showed that while the new Des Joachims plant could keep 1,410,807 of these lamps alight, it would require 8,239,111 average healthy men pedalling eight hours a day for 300 days a year to keep the same number of lamps lit.

Colorful Hydro Exhibit Is Opened By Chairman

distribution system, which portrayed the various steps involved in providing Hydro service from the actual generation and transmission of power to distribution and delivery to industrial, commercial and domestic consumers. Also shown was the growth in number of municipalities supplied by Hydro and in the number of consumers served by those municipalities.

Another series of murals and an animated map focussed attention upon Hydro's vast expansion program, which, by 1952, will have added approximately 1,600,000 horsepower to the Commission's resources.

Hydro's tremendous frequency standardization program and the many and diversified operations involved in carrying out this program, were graphically portrayed in a colorful and commanding section of Hydro's exhibit. By checking an illuminated chart, visitors from the present 25-cycle areas of Southern Ontario could see at a glance when their particular districts would be changed over to 60-cycle power. They could also get the answers to many questions on the how, why and what of the change-over program.

In order to give the general public a detailed explanation of the operation of a hydro-electric plant, an animated cross-section of Hydro's 480,000-horsepower Des Joachims Generating Station was displayed, and labelled to explain the various operations. In conjunction with this exhibit, Hydro installed a bicycle-generator which gave visitors the opportunity of seeing how much, or little, power they could generate. Would-be "human dynamos" learned that by some hard pedalling they could just keep one 150-watt lamp alight. By comparison, the annual, dependable kilowatthour ouput of the Des Joachims generating station can keep 1,410,807 of these lamps alight.

To round off this picture of Hydro in 1950, and to ensure that the public could obtain further information, visitors were invited to submit written questions, or to consult Commission representatives in attendance at the exhibit.



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MEMBERS of the Toronto Board of Control, City Council, as well as Toronto Hydro Commissioners and Directors of the C.N.E. visited the Hydro exhibit. In the top photograph, J. A. Blay, Manager of Promotion, is shown on the extreme right with one group, which includes Controller John Innes, Toronto.

* * *

CENTRE: Thousands of C.N.E. visitors were attracted to the impressive scale model of Hydro's Des Joachims plant. Features of the development were explained by Hydro representatives in attendance at the display.

* * *

LEFT. These distinguished Dutch visitors found a wide variety of interesting features at the Hydro exhibit, including an old-time electric range. Hon. George H. Challies, First Vice-Chairman of Ontario Hydro, (pointing) is shown with Royal Netherlands' Ambassador, His Excellency A. H. J. Lovink and Mrs. Lovink, Ottawa; and Mr. Raves Loot, Netherlands Vice-Consul and Mrs. Loot.



SYMBOLIZING THE HOSPITALITY extended to District 3 O.M.E.A. delegates, Mayor George Carmichael presents town key to President, Dr. M. P. Benger on behalf of the citizens of Kenora.



NEWLY-ELECTED EXECUTIVE of District 3 O.M.E.A., left to right, Mayor J. L. Skillen, Dryden and Mayor William Fuller, Sioux Lookout, Directors; Fred Greenslade, Kenora, Secretary-Treasurer; Reeve F. V. Kelly, Schreiber Township, Director, and J. V. Fregeau, Kenora, President, look over agenda. C. H. Moors, Fort William, Vice-President, was unable to be present at the convention.

MUNICIPALITIES associated with Ontario Hydro were given a resounding "pat on the back" for their achievement of the past three decades by Chairman Robert H. Saunders during his recent address to the 75 or more delegates attending the tenth annual convention of District No. 3, O.M.E.A.

Held at Kenora, September 11 and 12, this year's meeting was highlighted by a complimentary dinner at the Kenricia Hotel tendered by the Town of Kenora through its Public Utilities Committee.

President, Dr. M. P. Benger, of Port Arthur was chairman for this event which also featured short addresses by other Commission representatives including W. Ross Strike, Second Vice-Chairman; A. W. Manby, Assistant General Manager—Administration, and M. J. McHenry, Director of Consumer Service, as well as D. P. Cliff, Dundas, President of the O.M.E.A. and Robert Butter, Owen Sound, President of the A.M.E.U. Official greeting to the delegates was extended by Kenora's Mayor G. R. Carmichael who also introduced Mr. Saunders.

"Wonderful Progress"

In his full-scale review of Hydro operations throughout the province, the Hydro Chairman praised the municipalities associated with the Commission for "their wonderful progress."

In 1920, for instance, the assets of the 195 municipalities served by the Commission totalled $34,615,360 while their liabilities amounted to some $22,265,175.

Just 29 years later assets of the 309 cost municipalities had reached $274,449,178 while total liabilities had declined to approximately $14,169,268, it was pointed out.

"This is a wonderful achievement by groups of public-spirited citizens living in every section of Ontario," Mr. Saunders declared.

Praises Hydro

Dealing with the progress of the Ontario Commission in the past 30 years, Mr. Saunders said: "Truly your Hydro is a great institution which has paid and will continue to pay its own way."

In this connection, he pointed out that assets totalled some $72,500,865 in 1920 with long term and current liabilities amounting to $69,100,026.

By May 31, this year, the Commission's assets had reached a figure of $908,969,568 with total liabilities of $530,767,340.

Turning to Hydro's capital construction program, the speaker stated that $146,-

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Municipalities Commended

Local Hydro Commissions Have Made "Wonderful Progress" In Past 30 Years, Chairman Tells District 3 Delegates

804,982 was spent during the 1949 fiscal year while construction projects this year called for an average daily expenditure of over $361,502 or about $11,000,000 each month—altogether $154,000,000 from November 1, 1949 to December 31, 1950.

This construction program had done much to "protect Ontario's economy during the past few years," he said.

For example, during the years 1946 to 1949, Hydro paid to firms in the province a total of $248,340,000 for materials and supplies. Continuing, Mr. Saunders told his audience that Ontario manufacturers employed some 537,581 persons in 1947.

"Of this number, 363,588 were employed by the 1,751 firms from whom your Hydro purchased materials and supplies," he continued.

Power Situation

The present power situation emphasized the importance of the Commission's capital construction program which has increased its output to date by over 554,000 horsepower since the end of the last war.

Assuring his listeners that "we are safe in this section of the province," the speaker also referred to power conditions in Southern Ontario, where, he said "we must ask our people to save power at all times."

Predicting a still greater future for Northwestern Ontario, Mr. Saunders traced the growth of rural Hydro service in that part of the province, where 1,007 miles of rural line were serving 4,886 rural customers by the end of July this year.

Referring to the possibility of developing sites on the Winnipeg and English Rivers in Northwestern Ontario, the Hydro Chairman said that such action would depend to a great extent on the load growth in that section of the province.

"It should be remembered that two more units can be installed at Pine Portage to provide us with an additional 80,000 horsepower when required," he stated.

Joint Board

At the same time, the joint Winnipeg River Interprovincial Engineering Board which includes Dr. Otto Holden, Assistant General Manager—Engineering, and E. M. Wood of the Commission among its Ontario representatives, was conducting investigations for the development of the power resources of this watershed to the mutual advantage of both provinces.

Short addresses were also given by W. Ross Strike who was introduced by J. R. Pattison, Fort William; D. P. Cliff introduced by George Hutcheson, Huntsville, Secretary of the O.M.E.A.; Robert Butter introduced by R. B. Chandler, Manager, Port Arthur Public Utilities Commission; A. W. Manby, introduced by Sam Ashton, Port Arthur and M. J. McHenry, Director of Consumer Service, who was introduced by J. V. Fregeau, Chairman of the Kenora Public Utilities Committee.

L. A. McLennan, Kenora, and Mayor J. L. Skillen, Dryden, moved the vote of thanks to the speakers. A popular feature of the program was the musical entertainment provided by the Foreman quartet of the S.P.E.B.S.Q.S.A., one of the five barber shop quartets in Kenora.

Elect Officers

At the business session during the annual convention, J. V. Fregeau, Kenora, was elected President of District No. 3. Other members of the 1950-1951 executive include: C. H. Moors, Fort William, Vice-President; Fred Greenslade, Kenora, Secretary-Treasurer; Mayor William Fuller, Sioux Lookout, Reeve F. V. Kelly, Schreiber Township and Mayor J. L. Skillen, Dryden, Directors.

Delegates accepted the invitation of Mayor Fuller to hold the 1951 meeting at Sioux Lookout. On the recommendation of the retiring executive, a motion setting a registration fee of $7.50 for district delegates and $15 for commercial dele-

(Continued on page 111)



SCANNING RESOLUTION before formal presentation, this group includes, Sam Ashton, Port Arthur; J. R. Pattison, Fort William; Ralph B. Chandler and Dr. M. P. Benger, both of Port Arthur, who served as Secretary-Treasurer and President, respectively, of District 3 this year.



"CAN YOU TOP THAT?" Allan Howard, Thorold, left, asks George F. Hutcheon, Huntsville, O.M.E.A. Secretary; R. S. "Smoky" Reynolds, Chatham, and M. W., "Mort" Rogers, Carleton Place, as Norman Douglas, Smith's Falls, adjusts hat for D. P. Cliff, O.M.E.A. President, during A.M.E.U. "capping" ceremony at District No. O.M.E.A. Convention in Kenora.



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UNDAUNTED BY WET WEATHER, the group above, express the enjoyment of all the delegates who attended this year's District 3 meeting during the cruise on the Lake of the Woods. Left—During a lull in convention proceedings Art. Burleigh, Commission Area Inspector at Kenora, described some of the beauties of Northwestern Ontario for these delegates.

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STOLIDLY PROCLAIMING the prestige of his organization, Robert Butter, Owen Sound, A.M.E.A. President, left, set a new vogue when he acquired this tropical piece of headgear which won plaudits from A. W. Manby, Assistant General Manager—Administration and Commission Secretary E. B. Easson.

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LILLIPUTIAN PROJECTS...



General view of model used to solve hydraulic problems for Hydro's Pine Portage development on the Nipigon River.

Conditions At Specific Sites Simulated — Provide Advance Information On Many Hydraulic Problems Before Actual Construction is Started

by

Ian L. Thomson
Hydro News

PROVIDING the answers to many hydraulic problems during the planning and design of a new Hydro development, the models of various "projects" built and tested at the Hydraulics Laboratory of the University of Toronto, can be classed as small only in relation to their actual size.

By using miniature scale models and by being able to simulate conditions under which a projected development would operate at a specific site, engineers can obtain advance information which assures the building of the most efficient and economical type of project. For example, tests conducted with the use of these models make it possible to determine whether or not a channel, sluice or other structure, when built, will function satisfactorily.

Few major hydraulic structures or projects anywhere today are built without first being investigated by hydraulic models. In its model test program the Commission is keeping pace with progressive methods of design.

All model tests for the Commission are carried out by the hydraulic section of the Generation Department, headed by J. J. Traill. J. B. Bryce, Hydro's Assistant Hydraulic Engineer, is in charge of such tests, and works in co-operation with the various project engineers from Hydro's Generation Department. Assisting him in this work are several specially trained assistant engineers in the Hydraulic section, and frequently University personnel who are experienced in this type of work.

Over the past thirty years, a wide variety of tests associated with Hydro developments have been conducted at the Hydraulics laboratory. Subjects investigated have included design in bends of channels, protective measures to prevent erosion at the downstream side of dams, design and behaviour of intake structures, design of loose rock fill weirs, ratings of ordinary and special sluices in dams, design of log slides and study of log-driving facilities and many others.

Pine Portage Problems

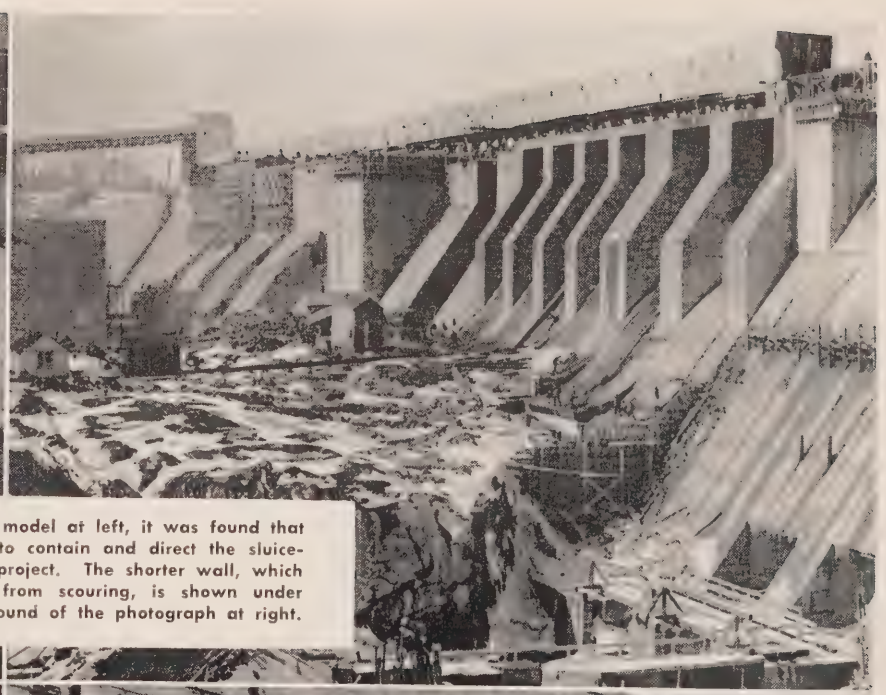
Among these numerous experiments was an interesting series of tests undertaken for Hydro's 160,000 horsepower development at Pine Portage on the Nipigon River.

Concerning these tests, two rather perplexing problems arose with regard to hydraulic design. These were: (a) at what point should the log chute discharge into the river below the dam to ensure that the logs would proceed satisfactorily downstream? and (b) were training walls necessary to guide the water from the sluiceways and over a sloping hillside to the river downstream, and if so what should their height and length be?

Largely for the purpose of answering these questions, it was decided to construct a hydraulic model, built to a scale of 1/48th, to reproduce that portion of the dam which contained the sluiceways, closure ports and log chute entrance, also the river downstream for a distance corresponding to about 1,500 feet in the prototype.

Influencing the decision to construct the model was the fact that much other valuable information would be obtained. The performance of the closure ports could be checked, thus enabling an accurate prediction to be made of their ability to discharge the river during the closure operation. An accurate discharge calibra-





AFTER EXACTING TESTS on the model at left, it was found that training walls were necessary to contain and direct the sluiceway flow at the Pine Portage project. The shorter wall, which protects the toe of the dam from scouring, is shown under construction in the lower foreground of the photograph at right.





DURING THE CLOSURE, while construction was underway, the Nipigon river was discharged through two ports located about midway up the dam. Many tests were made with the model on the left to determine the hydraulic performance of these ports. Photograph on the right shows the ports in operation at the development.

tion of the sluiceways also could be made, thus assisting in the operation of the plant after the water was raised and the control of Lake Nipigon shifted from Virgin Falls to Pine Portage.

Designing And Building Of Model

When the scale of the model and its extent was decided upon, the model plans were developed from drawings of the structures and topographical plans of the area. Structures were detailed and templates laid out from which the topography was formed.

Sid Turner, a craftsman from Hydro's carpentry shop, who has built almost all the Hydro models, then took over. In the case of the Pine Portage model, a large watertight wooden box to house the model was built first and erected at the University. The structure and the templates were then carefully fixed in the box about 18 inches apart, sand was placed between the templates to build up the topography, and then a final layer of cement mortar placed on top of the sand to give permanent ground surface.

Water pipes equipped with carefully calibrated water meters for flow measurements were connected with the model intake.

As the Nipigon River is relatively shallow below the main dam at Pine Portage it was also necessary to determine the depth of the water to avoid damage to the logs. A flexible metal trough represented the log chute in the model and many tests were run to determine the most effective location for its outlet. The model logs were made from plastic tubing rather than wood to minimize surface tension forces.

Prior to the test, it was expected that a large eddy would form below the dam, and that a long chute would be required to carry the logs past the eddy. The tests showed, however, that a much shorter chute would operate satisfactorily provided it was located in the proper place.

It was found that training walls were definitely necessary to contain and direct the necessary flow. On the right side, a wall was required to protect the powerhouse and tailrace areas from sluiceway flow. On the left side, a wall was found necessary to prevent scouring at the toe of the dam.

A great many tests were next carried out to determine the discharge capacity of the sluices. Precise measurements of flow and head on each of the sluiceways were made, each sluice being tested both wide open and with various numbers of stop logs in place.

As a result of these tests, it was possible to make an exact computation of the quantity of water flowing through the full size sluices in relation to any head

(Continued on page 31)

In The Highlands - - -



New Pitlochry Dam

A NEW 2-mile loch has been formed above Pitlochry Dam on the lowest section of the Tummel-Garry Scheme of the North of Scotland Hydro-Electric Board. Controlled flooding caused the River Tummel to overflow its banks and covered the former Pitlochry Recreation Ground to a depth of about 20 feet. A few weeks ago the new loch reached its full depth of 50 feet above the bed at the base of Pitlochry dam, its surface being 300 feet above sea level.

The aerial camera notes the change of scene in the Scottish Highlands as the recently opened dam at Pitlochry (part of new hydro-electric scheme) lets loch water stream through. Builders' cranes still working on the project are seen on both banks of the River Tummel, whose water will be turned into light for the crofters' homes.

Co-Operative Enterprise

"Each Working for Benefit of Whole And Whole for Benefit of Each," Chairman Saunders Tells Delegates To Eastern Ontario Electric Association — Discusses Share of 60-Cycle Areas In Cost of Frequency Standardization

QUESTIONS relating to the 60-cycle areas' share of the cost of frequency standardization in Southern Ontario were answered by Hydro Chairman Robert H. Saunders at the annual meeting of the Eastern Ontario Municipal Electric Association at Brockville on September 21.

"Let us remember," said the Chair man, "that this is a co operative enterprise with each working for the benefit of the whole and the whole for the benefit of each. Substantial benefits in dollars came with amalgamation — not only dollars but very substantial benefits to each municipality in having the right to an equitable share of all the power generated and purchased throughout the whole Southern System. Industry now is just as safe starting in Peterborough, Lindsay, Brockville and Ottawa, as it would be at Toronto, Hamilton or in the Niagara Peninsula, thanks to amalgamation."

Continuing, the Hydro Chairman declared: "Let us complete that which we started. You cannot have a proper and efficient system unless all are on the same cycle. Part and parcel of amalgamation is the standardization of frequency. It is right and proper that with the financial benefits of one part of amalgamation should come some responsibility—and it is relatively very small—in paying for the completion of that amalgamation by standardizing the frequency."

Policy Endorsed in 1948

Mr. Saunders pointed out that the present policy had been decided upon by Ontario Hydro back in 1948, that it had been endorsed by the municipalities of all sections of the System on June 21, 1948, and had been acted upon since. That decision, made by the H.E.P.C. and the municipalities in 1948 still stood.

One of the important questions dealt with by the Chairman during the proceedings was: "How much does the H.E.P.C. propose to charge the 60-cycle areas for conversion and how long will this charge continue?"

In answering that question, Mr. Saunders said he believed it was proper to point out that one of the original proposals called for a special levy equal to approximately $1.50 per horsepower on all municipal loads in the Southern Ontario System, including those presently on 60-cycle. That was the equivalent of $1.20 per horsepower on all loads. Such a levy, stated the Chairman, had been contemplated to raise $63,000,000 over 20 years or $3,150,000 a year. That proposal, however, had not been acted upon and was not included in the method of financing. "Clarkson Gordon and Co.," continued Mr. Saunders, "recommended that 'a charge should be included in the cost of power in each year until 1951 (when it is estimated the supply of power will be sufficient to meet the demands) which would result in maintaining the average cost of power at the 1946 levels. On the basis of the loads which are to be expected in these years, it is estimated that such a charge would produce approximately $20,000,000. This charge would replace the special provision for contingencies made in 1946.'"

The Hydro Chairman said they expected the total of assessments for the years 1948 to 1951 to approximate $25,000,000 instead of $20,000,000. The present belief of the Commission was that no further assessments on the 60-cycle areas in respect to Frequency Standardization would be necessary after 1951.

Mr. Saunders dealt at length and in detail with the method of financing the Frequency Standardization Program which, it had been estimated, would cost $191,000,000. In summing up, he pointed out that the contribution of the 60-cycle areas to the cost of the program was far below fifty percent.

Thanks Municipalities

In his address A. W. Manby, Assistant General Manager—Administration, spoke of the invaluable co-operation received from commissioners and staffs of Hydro municipalities in meeting problems associated with the phenomenal growth in load over the past few years. Expressing warm appreciation to municipal Hydro personnel, he directed attention to the tremendous industrial growth taking place in Ontario and to the way in which Hydro was meeting the challenge. It was important, he pointed out, that every effort be made to save electricity in order that employment and production might be maintained at the highest levels.

Approximately 100 delegates attended the meeting where they were welcomed by Mayor W. F. Reynolds of Brockville.

Following the business sessions, the delegates were the guests of the Brockville Public Utilities Commission on a cruise through the 1,000 Islands.

The following officers were elected for the ensuing year: Chairman, F. H. Plant, Ottawa; Vice-Chairman, H. B. Tully, Picton; Vice-Chairman, S. J. Babe, Oshawa; Secretary-Treasurer, S. W. Canniff, Ottawa; Directors: J. C. Baldwin, Lindsay; M. J. Elliott, Bowmanville; Dr. R. A. Patterson, Kemptville; O.M.E.A. Executive Representatives: G. E. Findlay, Carleton Place; James Harris, Kingston.

Served Preston For 34 Years

CLOSELY associated with municipal affairs in Preston for many years, Frederick O. Pelz died recently in his 77th year following a short illness.

Born in Saltfleet Township, Wentworth County, Mr. Pelz moved to Preston 66 years ago. He entered public life in 1916 and before his retirement from the Council in 1930 had served nine terms in various positions, including Alderman, Deputy Reeve, Reeve and Mayor (1929-30).

In 1931 he was elected to the Water and Light Commission and was Chairman from 1937 to 1949. He was Vice-Chairman at the time of his death. He was also a director of District No. 6, O.M.E.A. The deceased was an employee of Shantz Foundry for 60 years, having been Superintendent for some years prior to his retirement.

A member of St. Paul's United Church, Preston, and of the I.O.O.F. Lodge, Mr. Pelz is survived by his widow, two sons, six grandchildren and one great grandchild.



A. W. MANBY, Assistant General Manager—Administration, O. H. Scott, Belleville; and M. J. McHenry, Director of Consumer Service, discuss agenda of O.M.E.A. District 1 meeting at Brockville.



LOOKING FOR the various highlights on the day's program the delegates pictured above include Miss L. G. Beatty of Port Hope; B. L. Detlor, Deseronto; James Moffat, Napanee; and W. N. Moore, Port Hope.



THIS HAPPY group of delegates came from Ottawa. From left to right: S. W. Canniff, General Manager, Ottawa Hydro-Electric Commission; Mrs. E. A. Bourque; Mrs. Canniff; F. H. Plant, Chairman; Mrs. Plant, and Mayor Bourque.

OLD FRIENDS meet again! Left to right: A. Schofield, Mount Dennis; William Tait, William Henley, H. B. Tully, Picton; W. G. Pengelley and William Choat, Toronto, were among the delegates at this year's District 1 meeting.





GENERAL VIEW of the 200,000-kw (268,00-hp) Richard L. Hearn Generating Station, located on the Toronto waterfront.

MAKING RAPID PROGRESS

by
Edith B. Toland
Hydro News

A 50-acre site on the eastern section of the Toronto waterfront is a scene of bustling activity these days.

Some 400 men are speeding the construction of the Richard L. Hearn Generating Station, which upon its completion, early in 1952, will be the largest steam generating station in Canada.

Great steel girders are rising high in the air; underground pipes are being installed; concrete floors are being laid; and various other works are being carried on.

From its two units, the first of which is scheduled for service in the fall of 1951, will come 200,000 kilowatts (268,000 hp) of electrical energy to serve Hydro consumers in Southern Ontario. Initial delivery of power from the first unit will be at 25 cycles, but the unit will be readily convertible to 60-cycle operation when the Frequency Standardization Program in the Toronto area has progressed to a point where such operation is required. The second unit will operate at 60 cycles. This twin-frequency installation will eliminate excessive use of frequency changers.

Progress at this new station up to the first of October was regarded as very satisfactory by engineers connected with the job. Foundations for the building itself and for the equipment were complete, and 90 percent of the structural-steel main frame was finished and awaiting the brickwork. A total of 5,500 tons of steel and 2,750,000 bricks will be used in the building. The project will, it is estimated, cost approximately $40,000,000.

When Hydro News visited the site, work was proceeding on the concrete floors and a start had been made on erecting the 200-foot chimneys. Foundations for switchyard electrical equipment were complete, and the underground duct work was well under way.

Some 2,600 feet of intake and discharge piping to convey condensing water will be laid for this station, comprising 2,435 feet of reinforced concrete pipes and 165 feet of welded steel piping. About 70 percent of the concrete pipes, which were fabricated on the job, had been installed by October 1, and their completion was expected by the end of the month.

Installation of underground fire pipe-lines, city water pipe-lines, and sanitary sewage pipe-lines was well advanced, and the contracts for the high pressure steam piping and for the station electrical work had been awarded.

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



There's so much to do in the world besides cooking and keeping house—so much to see, so many places to go! No wonder clever homemakers plan oven meals and leave the kitchen "flat" for hours at a time, and save electricity.

* * *

Thrifty oven meals for October are: (1) Macaroni and cheese, and Apple Gingerbread; Scalloped Potatoes with Baked Sausages and Peach Crisp; Salmon Loaf with Scalloped Tomatoes, Baked Potatoes and Pineapple Tapioca; Meat Pie with glazed Onions, Browned Potatoes and Rice Pudding. Plan crisp raw vegetable sticks with cheese or tea biscuits to round out the meal.

* * *

In baking apples, they're usually the better for a little sweetening and sometimes a few drops of lemon juice or a dash of spice help to bring out their finest flavor.

* * *

To satisfy stimulated fall appetites, bake Southern Cornbread and serve hot with corn syrup or fresh honey.

* * *

In place of sandwiches for the lunch box, put an individual meat loaf cooked in a custard cup along with a buttered tea biscuit, muffin or roll. A little package of raw vegetable sticks (turnip, carrot and celery) is a treat with this lunch.

* * *

To cook kohlrabi, remove the leaves and peel the bulbs thinly, cut in cubes, cover with boiling salted water and cook until tender. Serve with white, cheese, or tomato sauce. It is also good with hot vinegar and bacon dripping.

* * *

Entertaining the bride? Take the cookie cutter, sliced bread, sliced cucumber, cleaned shrimp and mayonnaise. Cut bread in circles, and spread with mayonnaise; cut seed centre out of the cucumber slices and place on circles of bread and insert shrimp in the centre. Sprinkle with minced parsley and salt.

* * *

Another sandwich with a delicate flavoring is one using whole wheat bread and the following filling: Blend a package of cream cheese with 1/3 cup peanut butter, one tablespoon orange juice, and a ¼ teaspoon grated orange rind blended together with mayonnaise.

* * *

Pretty as pretty can be! To garnish sandwich plate cut each gherkin in thin slices, lengthwise to within a quarter of an inch of the steam end. Spread out fan-shape and nestle in pieces of lettuce, along with pickled onions tinted red.

* * *

Spilt salt means trouble! If there is too much salt in the soup all you can do is add more vegetables and more water. If there is too much salt in your homemade chili sauce, stir in some cold canned tomatoes.

* * *

We know that colored mash colors the feathers of baby chicks, and paprika turns the plumage of canaries red. Will we see fuschia colored hair on those who use the new bright red table salt?

* * *

Kitchen tongs have a dozen uses. You need never touch an egg in hot water if you use the tongs. They make it easy to drain bacon and flip over four or five pieces; take baked potatoes out of the oven, bottles from the sterilizer and meat from cold brine.

* * *

"Dat ole sweet pertater" may be cooked and mashed, and lightly sprinkled with flour as a good topping for chicken pot pie.

* * *

Shoulder chops are said to be less tender than loin chops, but try them breaded and cooked slowly. They are even more tender by dipping in buttermilk or sour milk, then pat on fine, dry crumbs before they are panfried.

* * *

Before the frost nips the green mint, snip off a few stems and keep in fresh water on the kitchen window sill. Use it frequently with boiled carrots, meat dressings, or chocolate sauce. You can continue the surprise flavoring at intervals until Christmas.

* * *

Turnip is a herb, so says one cook book writer. If this is true, we can eat a lot of herbs for one serving. Mashed turnip heated with slivers of candied ginger will make leftover turnip more enjoyable.

* * *

A different flavour at no extra cost! Baste meat loaf or pork chops with syrup left over from canning peaches.

* * *

Gay vegetable platters are an ideal supper dish:
Snowy white cauliflower surrounded with baked green peppers filled with buttered rice, and halves of broiled tomatoes.

* * *

Pickle peppers—the long hot kind are the necessary ingredients for Barbecue Sauce. Use only the quantity stated in the recipe . . . Save the seeds of hot peppers; let them dry before storing in an empty bottle, then a very few of them can be used in a meat loaf.

* * *

Lots of oatmeal found its way into the old cookie jar. A lot still does. So do other cereals, these days, in the form of shreds, flakes and puffed kernels. Read cereal advertisements for new recipes.

BLUSHING APPLE SALAD

6 medium apples
½ cup sugar
¼ cup cinnamon candies
water
1 pkg. cream cheese
lettuce

1. Wash apples, remove core and peel about one-half of apple. Place apples unpeeled side down in a shallow pan. Add ¼ cup sugar, candies and water enough to cover one-half of the apples. Cover and cook slowly about 10 mins. Then turn and cook about 10 mins.
2. Turn apples, peeled side up on broiler pan. Sprinkle with remaining sugar and broil about 5 mins. Cool.
3. Cut apples in quarters about ½ of the way from the top. Fill with cream cheese and place in lettuce cups.
4. Serve with potato salad and marinated cabbage and nuts.







Changeover Problems

Accounting and Administration Discussed During A.M.E.U. Conference

PROBLEMS arising from Hydro's Frequency Standardization Program and affecting accounting and office administration were the main topics of discussion at the 15th annual meeting of the Office and Accounting Section, Western Ontario Division, of the Association of Municipal Electrical Utilities. The one-day conference was held recently at St Catharines.

Speakers at the conference's afternoon session were C. W. Eastwood, Office Manager, London Public Utilities Commission; C. S. Phelps, Assistant Manager, Sarnia Hydro-Electric System; and D. J. McAuley, Supervisor, Audit Department, H.E.P.C. As standardizaton is well under way in London and virtually completed in Sarnia, Mr. Eastwood and Mr. Phelps spoke from first-hand experience with frequency problems, and offered suggestions and advice to those whose municipalities had not yet experienced the changeover to 60 cycles.

Common To All Municipalities

One of the main problems encountered by the London office, stated Mr. Eastwood, would undoubtedly be common to all

(Continued on page 32)

HEAVY REGISTRATION (top) reflected members' interest in the recent meeting of the Office and Accounting Section, Western Division, A.M.E.U.

FINAL CHECKOVER of notes is given by C. W. Eastwood (left) and H. D. McAuley (right) in centre photo. Third afternoon speaker was C. S. Phelps.

BUSINESS MACHINES claimed the attention of delegates (bottom) who previously heard talk on machines by Joseph Gary, utilities representative.

Conservation of Power Can Avert Restrictions

Present Situation Could Not Have Been Foreseen Last June Chairman Saunders Tells Electrical Manufacturers

WHOLEHEARTED co-operation on the part of every consumer during the next few months will help immeasurably in averting the need for power restrictions, Hydro Chairman Robert H. Saunders declared recently when addressing the Canadian Electrical Manufacturers Association. He said that the present power shortage was not caused by lack of water, but by a demand that could not have been foreseen four or five months ago, and even if it had been foreseen at that time, it could not have been prevented.

Citing the very difficult international situation as the main factor in the tremendous increase in power demands, Mr. Saunders recalled the speech made by Premier Leslie M. Frost in June this year at the Des Joachims opening, in which the Premier expressed the hope that no restrictions would be necessary in the fall and winter. Mr. Frost, Mr. Saunders stated, was repeating the views of Ontario Hydro, including himself and other top Hydro officials. In this regard Mr. Saunders said: "It may be that we are too hopeful, that we should have seen the events of the past two months. What if we had — nothing could have been done in any event to prevent the present situation."

Announcing that he was still hopeful that restrictions could be avoided, Mr. Saunders reviewed Hydro construction progress over the past three years and said that Hydro's engineers had done "a truly wonderful job." Already more than 500,000 kw (670,000 hp) of additional power had been brought into service, he pointed out. Another 120,000 kw (160,000 hp) would be available by the end of this year. A further 465,000 kw (624,000 hp) by December 31, 1951. Summing up Ontario Hydro's efforts to close the gap between demand and supply, Chairman Saunders paid tribute to the Commission's staff when he said: "Every one of our 21,000 temporary and permanent employees have done all possible to meet the increased demands."

The pessimist says "You can't win". The optimist knows you can't lose, if you invest in Canada Savings Bonds.



MEETING IN NIAGARA FALLS recently, the Canadian Electric Manufacturers Association heard an address by Chairman Saunders on the power situation. Pictured at the conference are, left to right — W. C. Cannon, President of Frigidaire (Canada) Ltd., also President of the C.E.M.A. for 1950-51; Hydro Chairman Robert H. Saunders; G. W. Lawrence, President, Sangamo Co. Ltd.; A. S. McCordick, Vice-President, Moloney Electric Co.; R. L. Hearn, General Manager and Chief Engineer, Ontario Hydro; Harold Cooch, Canadian Westinghouse Co.

Co-operation Urged

Accelerated Production of Essential Materials Main Cause of Upsurge in Demands for Power, W. Ross Strike Tells District No. 6 O.M.E.A. Delegates





TOP PICTURE: Delegates pause in front of the club house. Left to right, c —G. Preston, Hamilton; A. E. Fort, St. Marys. Back Row, left to righ Teckoe, Galt; George Glover, St. Marys; G. H. Fuller, Windsor; L. Bigham, H ton; A. J. Girdwood, Guelph; H. O. Hawke, Galt; R. M. McKenzie, Han ABOVE: Group of members of District No. 6 O.M.E.A. register for their A Meeting which was recently held at Cutten Fields Golf Club in G

ENLISTING the close co-operation of all the municipalities in helping save power, W. Ross Strike, K.C., Second Vice-Chairman of Ontario Hydro, addressing delegates at No. 6 O.M.E.A. Annual Meeting, cited the increased activity in industries engaged in essential production as the main cause for the sharp upsurge in demands. Outbreak of hot war or the speeding up of the cold war would result in even higher demands on the power system, he said.

Mr. Strike addressed the delegates after a luncheon held in the Cutten Fields Golf Club in Guelph, scene of this year's meeting, following official welcomes by Mayor J. Clare of Guelph, and J. Waldo Montieth, President of the No. 6 District Association.

Regional Offices

Also stressing the importance of continued co-operation, M. J. McHenry, Director of Ontario Hydro's Consumer Service Division, asked that the delegates endeavor to ensure that their commissions kept in close contact with the regional offices.

Mr. McHenry stated that he had had enquiries recently on the distribution of loads supplied by Hydro. In this connection, he said that an analysis of 1949 loads showed that domestic consumers used 22.8% of all kilowatthours. Commercial consumers used 8.2%, farms 2.76%, street lighting 1.09% and industry 65.12%. Thus two-thirds of all the kilowatthours were used by the manufacturers.

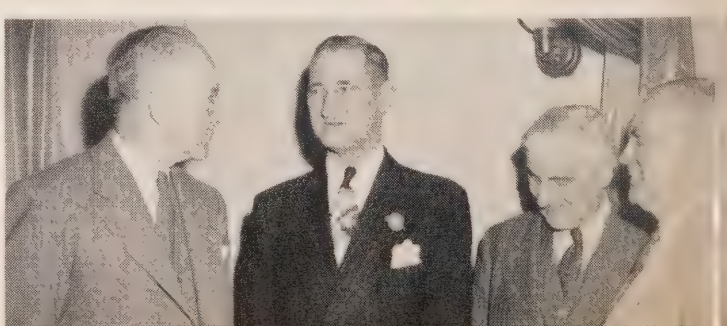
Following Mr. McHenry's speech, short addresses were given by H. D. Rothwell, Administrative Assistant — Regions, for Ontario Hydro; R. M. McKenzie, Manager of Hydro's West Central Region, and D. P. Cliff, President of the O.M.E.A.

During the business session of the meeting, C. K. Merner, New Hamburg, was elected President of No. 6 District; G. W. Gordon, Kitchener, was elected Vice-President, and members of the elected executive included: A. J. Girwood, Guelph; A. E. McIntyre, Stratford; Harvey Hawke, Galt; F. E. Welker, St. Jacobs; Dr. H. A. Mutton, Mitchell. The executive at a later meeting carried a motion to appoint A. H. Roth, New Hamburg, as Secretary-Treasurer.

(Continued on page 32)



NEW COMMITTEE for the current year. Front, l. to r.—A. J. Girdwood, Welker, J. W. Monteith, (retiring President); C. K. Merner, (President); Dr. Mutton. Back, l. to r.—H. O. Hawke, A. E. MacIntyre, F. O. Pelz, J. J. F



RIGHT: HYDRO AND WINDSOR UTILITIES officials have a pre-luncheon discussion. Left to right—W. Ross Strike, 2nd Vice-Chairman, Ontario Hydro; W. P. Bolton, Chairman of Windsor Utilities Commission; M. J. McHenry, Director of Consumer Service, H.E.P.C. and Gordon H. Fuller, Windsor.

LILLIPUTIAN PROJECTS

(Continued from page 23)

water level. This proved to be valuable information, as the regulation of Lake Nipigon requires an accurate knowledge of the water discharged by Pine Portage.

During the closure, the river had to be discharged through two ports or openings about midway up the dam. Many tests were made to determine the hydraulic performance of these ports so that an accurate prediction might be made of the levels to be expected during closure and the time required to raise the headpond.

In reply to a query regarding accuracy of the information obtained from such small scale models, engineers in charge of these tests state that providing good judgment is used in the selection of subject and scale, wholly reliable results should be secured.

This is borne out by previous experience gained by the Commission, they also point out. Operation of the model must, however, follow quite exact model laws involving rates of flow, depths, and velocities. It is of interest to note that some of the basic similarity laws were first advanced by Sir Isaac Newton in 1686.

While the trim and realistic appearance of many of these lilliputian projects would capture the imagination of most boys from 6 to 60 and over, they are definitely not in the toy class as has already been demonstrated by the important role these models have played, and are playing in providing efficient electrical service to the people of this province.

R. L. DOBBIN BUSY MANAGER

Ross Leonard Dobbin has been General Manager of the Peterborough Utilities Commission since 1914 when the Commission took over the electrical service for the city.

Mr. Dobbin was born in nearby Lindsay and attended primary and secondary schools in Peterborough. He later graduated from the University of Toronto. He is keenly interested in his profession and is consulted on municipal affairs by various towns and cities.

Mr. Dobbin is Past Chairman of the Canadian Section of the American Water Works Association; a Past President of the Association of Municipal Electrical Utilities; and a member of the Council of the Engineering Institute of Canada. He is also interested in practically all sports and is a Past President of the Peterborough Golf and Country Club, and also of the Peterborough Curling Club.

Sets New Record As Commissioner At Peterborough



GORDON S. MATTHEWS

ACTIVE in public life for the past quarter century, Gordon S. Matthews has been a member of the Peterborough Utilities Commission since 1926 and has served as Chairman since 1927. His father, T. Frank Matthews, a pioneer industrialist, was Chairman of the Peterborough Commission from 1902 to 1919.

Born and educated at Peterborough, Mr. Matthews attended the University of Toronto and served with the 3rd Division during World War I. He is now manager of the Canada Packers' Limited branch in the Liftlock City.

Keenly interested in sports, Mr. Matthews enjoys sailing and curling. He is a past president of the Baseball Club and is a member of the Peterborough Golf Club, Y.M.C.A. and Rotary Club. He is also a Director of the Victoria Trust and Savings Company at Lindsay.

JOHN MacRAE DIES

JOHN MacRAE, aged 55, employee of the Toronto Hydro-Electric System, died recently in hospital.

He was born in Scotland and came to Toronto in 1920. A veteran of World War I, he served with the Royal Navy. Mr. MacRae was a member of Ionic Lodge, IOOF and Delta Lodge, AF and AM. He is survived by his widow, the former Grace McCorkindale; two brothers and two sisters.

MUNICIPALITIES

(Continued from page

gates at all future District 3 conventions was endorsed.

During a short address to the delegates, W. Ross Strike referred to the power grid which was being established by Hydro through the Building of new tie-lines to form an inter-connected system.

At another point in his address, in reply to a query from Mayor Fuller, Sioux Lookout, regarding the possibility of using public utility surpluses to purchase municipal bonds, Mr. Strike said that local commissions were required by provincial law to keep their Hydro finances strictly separate from other municipal funds, investing any surpluses in guaranteed Dominion or Provincial bonds.

Importance Of Grid System

A. W. Manby, Hydro's Assistant General Manager—Administration also emphasized the importance of the grid system, pointing out that this interconnection was not being carried out for the purpose of transferring quantities of power away from any one section of the province. The basic idea behind the establishment of the grid was the protection of each part of the province, he explained.

"For example," he pointed out, "three systems were amalgamated into the Southern Ontario System a few years ago. This means that fixed charges to provide reserve capacity have been reduced."

Mr. Manby also explained that the grid system would enable certain areas to overcome the effect of poor water conditions by their connection with an adjacent area where more normal conditions prevailed.

Receiving whole-hearted and spontaneous approval was a resolution which noted the absence of Albert Jennings, veteran East York Commissioner, through illness. This resolution of regret was directed to Mr. Jennings bearing the signatures of all delegates present.

Climaxing the two-day event was a cruise through the isle-studded Lake of the Woods with luncheon at Kipling Lodge where delegates again took the opportunity of thanking their Kenora hosts for their outstanding hospitality.

HYDRO SERVICE AT MELDRUM BAY

Hydro power was turned on recently at Meldrum Bay in the Manitoulin district. The line was built during the winter and spring months, thus bringing service to the western end of the island where a large number of summer cottages are located.

Gray Heads Committee To Work With Hydro

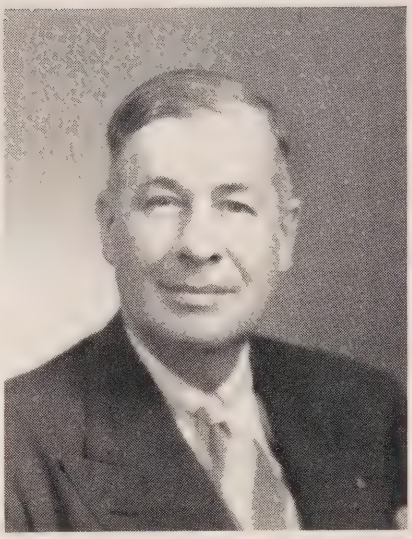
MAXIM T. GRAY has been appointed Chairman of a committee of elected officials and officers of Niagara area municipalities to co-ordinate and deal with community problems in conjunction with Ontario Hydro arising out of the construction of the new Sir Adam Beck Niagara Generating Plant No. 2.

Mr. Gray, General Manager of the Niagara Parks Commission, a division of the Ontario Government, since 1941, was formerly a member of the engineering firm of Hagey and Gray, Fort Erie. In this capacity Mr. Gray was associated with professional engineering and land survey projects for municipalities and firms throughout Ontario and the Maritime provinces.

The Niagara Parks Commission, under the chairmanship of the Hon. Charles Daley, Ontario Labor Minister, administers a 3000-acre parks system, extending for 35 miles from Lake Erie to Lake Ontario. Under Mr. Gray's managership there is a summer staff of 500 and a winter staff of 250.

He is a member of the Association of Professional Engineers of Ontario; the Ontario Land Surveyor's Association and a Senior Fellow of the American Institute of Park Executives. Mr. Gray is also secretary of the Niagara Falls Illumination Board, a joint international board which administers the illumination of the American and Canadian Falls as a scenic attraction for visitors.

COMMISSIONER HILLS



FREDERICK HILLS

Frederick Hills has served nine years as Commissioner on the Peterborough Utilities Commission. He was born and educated in Toronto and is now in the insurance business.

During the First World War he served in the R.C.A.S.C. from 1915 to 1919 in Canada, England and France. Some of his leisure hours are spent at the Peterborough Y.M.C.A., Peterborough Club, and Peterborough Golf and Country Club. He is married and has one daughter.

CO-OPERATION URGED

(Continued from page 30)

Will Study Constitution

It was decided during the main session to appoint a committee of three to study the constitution of District No. 6 and report to the next meeting of the executive. This decision was in line with a suggestion offered by D. P. Cliff, O.M.E.A. President, who was queried by J. W. Monteith on the constitution of other OM.E.A. Districts.

At the close of this session, T. Creighton of Listowel extended an invitation to No. 6 District to hold their next annual meeting at Listowel. The offer was accepted unanimously by the convention, and President C. K. Merner was instructed to write to the Listowel P.U.C. accepting the invitation with thanks. Following the business meeting, William Dalton, Special Assistant to Hydro Chairman Robert H. Saunders, gave an interesting and informative address on Frequency Standardization. He gave a detailed outline of the various stages of changeover, and revealed some interesting facts and figures which could be used by the delegates as instructional pointers to all classes of consumers.

Standardization Progress

Stating that the anticipated length of the program will be from 10 to 12 years, Mr. Dalton traced its progress in Southern Ontario showing, by the use of an animated map, the various areas which are still to be converted. Expressing the Commission's desire to keep the public informed on all phases of standardization, the speaker urged his audience to contact Chairman Saunders direct on questions relative to this subject.

The general meeting was adjourned after Mr. Dalton's address, and delegates were afforded the opportunity of playing a round of golf on the club's course. The delegates later assembled for dinner as guests of the Guelph Light and Heat Commission. Introduced by N. H. Siegel, Stratford, guest speaker A. E. Nelson, Inspector of Public Schools for North Perth, treated the delegates to an instructive and witty talk on the importance of co-operation.

CHANGEOVER PROBLEMS

(Continued from page 28)

municipalities undergoing the changeover. This was the fact that the new program almost inevitably called for the drawing up of new types of accounts, under a new series of account numbers. These would be necessary, he felt, in order to segregate F.S.D. orders from regular orders. This opinion was endorsed by Mr. Phelps, who declared that setting up separate F.S.D. accounts now would be insurance for the future, when differentiation would have to be made between temporary changes necessitated by the standardization program and changes of a permanent nature.

Mr. Phelps also mentioned the requests received by the Sarnia office for 60-cycle power in sections of the city not yet changed over. These requests, he said, came from two types of customers — new residents who had just moved in from 60-cycle areas, and service and repair shops handling 60-cycle equipment. For these people, he declared, special efforts had to be made to provide 60-cycle power as quickly as possible. "It is a problem of co-ordination and co-operation," he said, "and we try to give satisfaction wherever possible."

Discussing meters, Mr. McAuley advised the delegates that replacement and repair were to be charged to capital expenditure whereas the $3 floater charge on meters in connection with standardization was an F.S.D. expense and should not be capitalized.

During the lively discussion period which followed, a question was raised as to the proper procedure to be followed when a family moved from a 25- to previously-converted 60-cycle area. Mr. McAuley stated that such a domestic customer was authorized to make application to have his frequency-sensitive equipment changed over by a qualified technician and to send the bill, paid by him, the customer, to the Standardization office in that area. The office would then reimburse him. In a case like this, Mr. McAuley said, much time and trouble could be saved by the cusomer making his arrangements ahead of the cutover day and advising the F.S.D. office of his plans.

Speaker at the morning session of the conference was Joseph Gary, Public Utilities Representative of the National Cash Register Company, New York. Mr. Gary described the various types of machines used in utility accounting, pointing out the advantages of each particular type. Following his address, the delegates viewed a number of machines on exhibit.

Luncheon speaker was Walter G. Fisher, immediate past president of Lions International, who spoke on "Keeping out of the Red," as applied to both accounting and politics.

hoto-news



POWER DEMANDS soared on Sunday, September 24, when a heavy pall of smoke, drifting eastward from Alberta caused a partial blackout in Toronto and many other parts of Canada and United States. This photograph, taken from the top of the Commission's Head Office building shows a section of Toronto in semi-darkness late in the afternoon as the spectacular cloud headed south over Lake Ontario at 40 m.p.h.

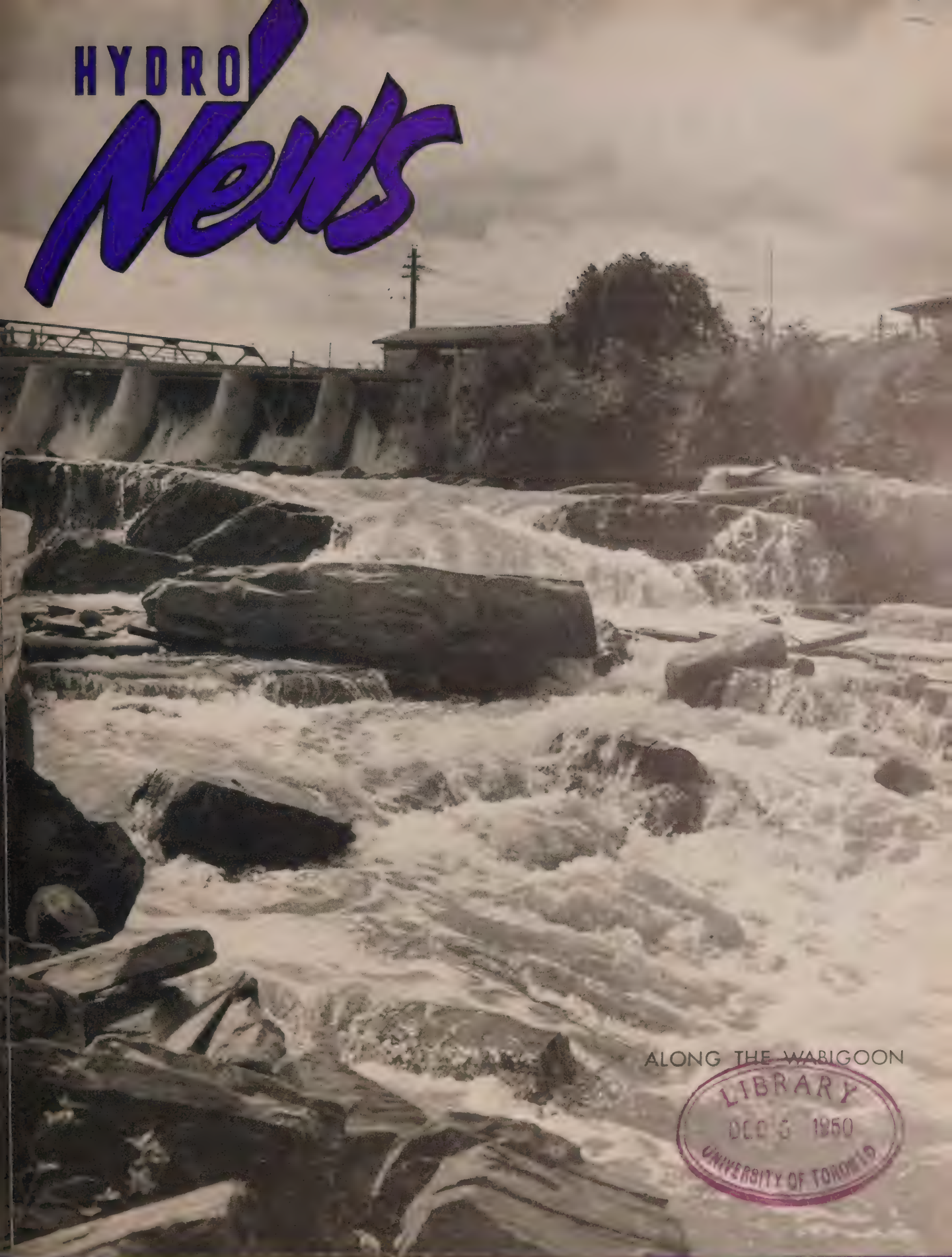


MEMBERS OF THE A.M.E.U. EXECUTIVE on a recent educational tour through Northwestern Ontario stopped off at Pine Portage to see the new station in operation. This photograph was taken as the party alighted from the train at Nipigon to board buses for the trip to the plant.



KAKABEKA FALLS

HYDRO News



ALONG THE WABIGOON

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DEC 6 1950
UNIVERSITY OF TORONTO

NOVEMBER 1950 NUMBER XI

THANKS ONTARIO!

BUT—PLEASE KEEP UP THE GOOD WORK

Your Hydro thanks all consumers and municipalities who through voluntary saving of electricity and the extension of daylight saving time have helped to ease the power situation. However, it is important that all citizens continue to save electricity in order to assist in meeting the high wintertime demands ahead.

ONTARIO IS GROWING

More electricity is required for new homes, new factories, new rural consumers. In addition, the step-up in rearmament production has resulted in a further sharp increase in power demands. In the past few weeks, the primary peak demand for power in Southern Ontario has been on the average as much as 540,000 horsepower higher than a year ago . . . an amount over six times greater than the long-term average rate of increase.

HYDRO POWER SUPPLY INCREASES IN 1950

To help meet this condition, your Hydro to date this year has added 510,500 horsepower, of which 374,000 horsepower was in Southern Ontario. An additional 100,000 horsepower will be available to this part of the province before the end of December from the Chenaux and Des Joachims developments.

However, the demand for power continues to soar. Your full co-operation is essential in saving electricity wherever and whenever possible. Use one light instead of two. Please turn off lights burning in out-of-the-way places. Turn off appliances as soon as they have served your purpose.

GENERAL MANAGER *CHAIRMAN*

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

at home* AVOID WASTING ELECTRICITY *at work

HYDRO News

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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COVER SHOTS

OUR FRONT cover photograph this month, from the camera of Robert Armstrong, Hydro Staff Photographer, depicts the rugged beauty of the Wabigoon River at Dryden, Ontario. The sombre beauty of the Montreal River is portrayed in the back cover "shot" taken by Hydro Photographer J. Burt Helling near Cobalt.

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November, 1950

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McConnell Lake Control Dam at Hydro's Des Joachims Generating Station on the Ottawa River. Equipped with six 40-ft. sluiceways and forty 16-ft. stop-log sluices, the dam controls the headwater level and discharges surplus water during flood periods.

An Achievement Of A High Order

BY the end of the present year, after only some fourteen months of operation, Hydro's Frequency Standardization Program will have brought the benefits of 60-cycle service to approximately 85,000 customers, representing a load of about 120,000 kilowatts, in the 25-cycle areas of Southern Ontario.

It is estimated that, already, well in excess of 275,000 individual pieces of frequency-sensitive electrical equipment have been changed over.

This is an achievement of a very high order, especially when it is remembered that the Commission, in common with many other organizations and individuals, has had to face the problem of shortages of many essential materials.

While every effort is exerted to have all the necessary parts on hand to meet changeover schedules — and in most cases a customer's appliances and equipment are altered for 60-cycle operation on cutover day —there are times when manufacturers cannot make deliveries of all required parts to meet pre-arranged schedules. The result is that some customers may have to wait a little time before their own equipment is returned. Such cases, however, receive special attention in order that the return of changed-over equipment may be expedited as quickly as possible.

One factor which has contributed to delays in many instances has been the failure of a customer to report the purchase of additional 25-cycle electrical equipment after inventory of appliances and equipment has been taken by technicians who visit homes and farms as well as industrial and commercial organizations for that specific purpose several months before cut-over day.

Naturally, parts cannot be ordered for appliances that are not reported. As a result, the customers involved in such cases have to wait until the parts have been ordered and delivery has been made before the necessary changeover work can be done.

Still another problem with which changeover technicians are faced from time to time is that of no one being at home on inventory and cut-over days. It will be readily appreciated that "absenteeism" on such occasions not only doubles the work of the technicians but it can ultimately cause great inconvenience to the customers themselves. For example, when a customer or a friend is not at home on the day when service is changed over from 25 to 60 cycle, technicians can do only one thing — disconnect the service. If this were not done, 25-cycle appliances in a home might be damaged by the 60-cycle current.

Special precautions are taken to notify all customers as to the days on which inventories will be taken and dates and times of "cut-overs." In view of this fact, a responsibility rests upon the customer as well as Hydro's changeover crews. Several times during the present year, Commission Chairman Robert H. Saunders has directed special appeals to all customers in areas scheduled for changeover and has enlisted their co-operation in watching the mail for special notices concerning inventory and cut-over days, and in following instructions in order that the work may be facilitated.

As Mr. Saunders has pointed out, the closest co-operation on the part of both Hydro and Hydro users in the areas now being changed over is of paramount importance. It is a matter of record, however, that the great majority of customers have followed instructions to the letter, thus helping materially to expedite the work of the changeover crews who have to maintain a closely-timed schedule. In noting this fact, the Chairman has been quick to acknowledge their helpfulness and to express the Commission's appreciation.

Indeed, these customers have shown a keen appreciation of the problems associated with the carrying out of the Frequency Standardization Program which is the largest undertaking of its kind ever attempted anywhere in the world.

Involving an expenditure of approximately $200 million over a period of from ten to twelve years, it is designed to bring far-reaching benefits to all customers in the present 25-cycle areas of Southern Ontario. When it has been completed, Ontario as a whole will enjoy the advantages of having a frequency which is more or less standard in other parts of Canada and in the United States.

This is of vital significance, especially in time of emergency because a standard frequency will facilitate the inter-change of power not only within the Province itself but between Ontario and other parts of Canada and the United States.

By keeping the long-range, overall objectives of the program in mind, all customers in the areas now being changed over can render a public service of the highest order, through their co-operation.

Forty Leagues Onward

New Transmission Line Will Link Patricia and Thunder Bay Networks

ADDITIONAL power made available by the Pine Portage development on the Nipigon River has brought Hydro resources in Northwestern Ontario up to approximately 345,000 horsepower and is enabling the Commission to carry out important extensions and improvements to its services in this part of the province. Numbered among new undertakings is the building of a 115,000-volt transmission line from Moose Lake, near Atikokan, to the town of Dryden. This line will link up with the circuits from Hydro's 25,000-horsepower generating station at Ear Falls on the English River, augmenting supply to existing customers and increasing the supply available for the extension of rural services and further industrial expansion. Service is scheduled for May, 1951.

Some years ago Hydro built a 115,000-volt transmission line from Port Arthur to Moose Lake—a distance of approximately 120 miles—to serve the Steep Rock Iron Mine and tie in with services given by the Ontario and Minnesota Power Company in the Rainy River District. From Moose Lake to Dryden is about another 100 miles. Including the distance from Pine Portage to Port Arthur, power transmitted through to Dryden will travel approximately 300 miles. Normally, there would be quite a sag in voltage. The power racing through to Dryden, however will get a fortunate "break." It will pick up a "second wind" at Moose Lake.

by
Harry M. Blake
Hydro News

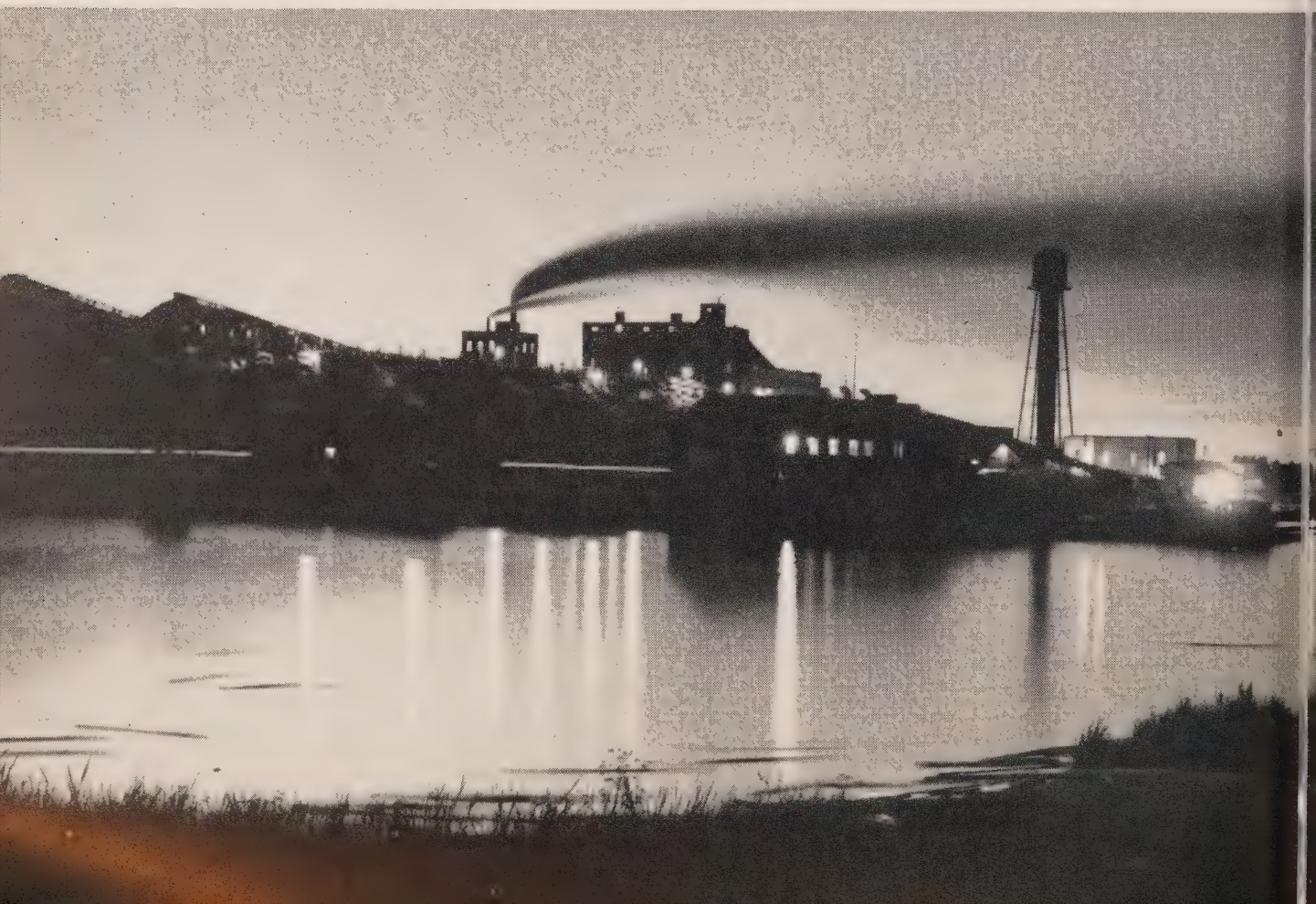
When, about a year ago, Hydro took over the old power plant of the Ontario and Minnesota Power Company at Moose Lake, that plant was stranded high and dry because of a diversion of the Seine River for mining purposes. It had already been converted into a condenser station, and with additional equipment installed, Hydro is now using it to regulate voltages.

Incidentally, but no less effectively, this "booster" station will correct, in large measure, the voltage loss on the power destined for Dryden, giving the new service originating at the generating stations on the Nipigon River renewed voltage vigor for the second section of the Rainy River marathon.

Begun At Dryden End

From Moose Lake to Raleigh Lake—a distance of 47 miles—the country is a jumbled wilderness of forest, rock and water, devoid of road or railway and completely isolated from settled communities. As a good start is half the

DISPELLING THE gathering darkness with a myriad of electric lights, this pulp and paper mill at Dryden is symbolic of the changes Hydro power is effecting in Northwestern Ontario. The mill now uses a Hydro load of 5,360 horsepower in addition to power derived from its own resources.



battle in any construction job, it was decided to begin the building of the new line from the Dryden end.

When *Hydro News* arrived at Dryden towards the end of August, the first 50 miles of the location survey had been completed and Frank D. Archibald, the Field Engineer, expected to be finished with this part of the job by mid-November. Survey parties were being flown in to isolated territory and the same procedure was to be followed by the construction crews who were working close in the wake of the clearing operations. In addition to the headquarters camp at Dryden, a second camp had already been set up at Wabigoon so that construction was proceeding in two sections simultaneously. As the work progressed, there were to be four more camps, each providing accommodation for 65 men. Altogether, 380 men were to be employed in line construction.

Line Clearing Job

The line clearing calls for about 175 men. These are all experienced woodsmen, hired in small groups on contract. They provide their own accommodation and cook their own meals. We chatted with a father and two sons clearing a section of the line deep in the bush near the end of the survey. They were quiet-spoken men and conscientious workers, swinging axe and brush-hook with the confident assurance of long practice. Behind them was a beautifully-cut swath, with the brush piled neatly in the centre. They told us that they always worked together when they could. They were out soon after dawn, returning to their tent at dusk. After a simple but substantial meal, they would sit around their carefully-guarded fire for awhile, honing their axes and smoking a pipe or two. Then, as the curtains of the night were drawn and the stars overhead began to glitter with an undimmed brilliancy, they would go to bed. With Sundays off, that was their life, one day after another, until they finished the job. They liked the work, and they were healthy, contented and happy. Working together harmoniously, with Hydro inspectors passing up and down the line and the construction crews close on their heels, there was no danger of their developing that *malaise* of the solitary so appropriately diagnosed in the term "bushed."

The line from Moose Lake to Dryden is a twin-pole line, with the structures spaced from 400 to 700 feet apart. Its general course had been laid out previously from data furnished both by investigations on the ground and aerial reconnaissance. The object of the survey, about half-completed at the time of our visit, was to conform location to the



CONSTRUCTION FOLLOWS close after clearing on the Moose Lake—Dryden line. Structures are spaced from 400 to 700 feet apart.

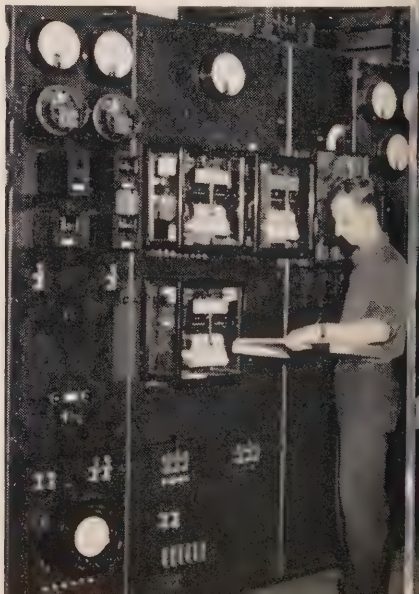
HYDRO'S TRANSFORMER STATION at Moose Lake, 125 miles west of Port Arthur, is the starting point for the new line extension to Dryden. With a capacity of 30,000 kva, it will handle the power destined for the Steep Rock Iron Mine and the rapidly developing Atikokan district.



◀ RIVER DIVERSION has stranded this o powerhouse at Moose Lake "high and dry It is now used by Hydro as a condens station for regulating voltages. It will giv a new start to the power coming in from Po Arthur as it continues its journey to Dryde

★ ★ ★

IN THE Condenser Station at Moose Lak W. D. Hampshire records voltages f Plant Superintendent R. A. Mansfiel ▼



exact requirements of construction. As the survey proceeds, the positions for the supporting structures are carefully marked out, so that no time is wasted and construction crews can concentrate on their own specialized jobs.

Air-Jet Method Employed

Hydro News accompanied Cecil C. Martin, who is in charge of the construction of the line, and William McPherson, Construction Superintendent, on a tour of inspection in the Dryden neighborhood.

A few miles out of town a crew was erecting poles by the "air-jet" method. As we came on the scene, with the assistance of mechanical equipment, they were swinging into an upright position one of the big western cedar "sticks," which are 55 feet long and average 1400 pounds in weight. Air from a mobile compressor close at hand was displacing the earth and roots in a hole started beneath the butt. When the operation had been carried out to the required depth, the word was given to "lower away," and the pole sank easily into position. Some finishing touches were given through the air pipe until the scale mark on the butt was flush with the surface of the ground. A little rock-fill around the base and that was it.

"We employ the air-jet methods wherever ground conditions require it," the Superintendent told us. "Here it is much quicker than by digging, and we don't require to be continually lowering a sand-shield as the operation proceeds. As the earth is displaced by the compressed air, a space or vacuum is created into which the butt of the pole fits snugly as it descends."

Cedar poles are practically immune from above-ground parasitical attack, and only the butt is creosoted. Pine poles have to be treated from top to bottom.

Radio Communications

Radio is playing an important role both in expediting construction of the Moose Lake-Dryden line and in caring





CLEARING LINE ahead of Hydro construction crews is a job for experienced bushmen. Small groups work under contract. This family party of father and sons are fast and competent

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WHEN CONDITIONS require it, the "air-jet" method instead of digging is employed in making the excavations for poles. The soil is easily displaced and the poles sink down snugly.





EQUIPMENT USED on Hydro line construction is always suited to the job. Instead of a jin-pole, a special frame mounted on a tractor is being used for handling the big cedar poles on the Moose Lake—Dryden line. The poles are 55 feet long and average 1,400 pounds in weight.

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BEGINNING IN February, by the end of September Hydro was supplying 105 new farm services in the Dryden district. This farm, now electrified as well as mechanized, comprises 1,200 acres.



for the men in the isolated bush camps. At Two Mile Corner, just outside of Dryden, a temporary dual-purpose communication station has been established. Through high-power radio installations, direct contact with Toronto headquarters is maintained, while, through low power sets, there is a to-and-fro communication with the camps. As most of the camps are in isolated territory, the importance of this arrangement, especially in the case of accident or sickness, is obvious.

Plane Permanently Engaged

A plane has been engaged to take personnel, equipment and materials to the various camps in the isolated sections of the Moose Lake-Dryden line. Hydro's consideration for the men it employs on construction jobs is proverbial and this plane is also prepared to function as a flying ambulance. It will take in any needed medical supplies and fly out any workers who through accident or sickness require hospital attention.

New Transformer Station

Starting in December, Hydro construction crews will be engaged on another activity at the Two Mile Corner. This is the construction of a new transformer station. It will have a capacity of 16,000 kva. In 1947-48 a new line was built from Hydro's 25,000 horsepower Ear Falls Generating Station to Dryden, and, in anticipation of further power developments on the English River now in the planning or investigation stage, was insulated to transmit power at 115,000 volts. For the present, however, it is operating at 44,000 volts. The new transformer station at Dryden will handle this 44,000-volt power from Ear Falls as well as the 115,000-volt power coming in over the Moose Lake-Dryden line. An all-round tie-in will be effected so that power from Hydro's generating stations on the Nipigon River, together with the power from Ear Falls, can be pooled to give improved services to customers.

An Important Industry

One of the chief Hydro customers in the district is the Dryden Paper Company Limited. It was established back in 1912, long before Hydro came into Northwestern Ontario. For many years it derived the electricity used from four power stations of its own with a total capacity of 5.000 kilowatts or 6,700 horsepower. These stations are still in service, but the growth in production has called for even bigger loads, and since 1941 the mill has been taking Hydro power in increasing quantity. The load at present supplied by the Commission averages about 4,000 kilowatts or 5,360 horsepower, and, if business expands in

anything like the ratio of the past few years, there is reason to believe that this progressive company will be able to utilize a good deal more electricity when it becomes available.

Production at the pulp and paper mill at the time of our visit, was rated at 177 tons a day. The 50 tons of pulp produced was nearly all exported, but 95 percent of the paper output (estimated at 127 tons) found its way to an all-Canadian market. The company is an employer of labor on quite a large scale. No less than 500 men are working at the mill, while another 500 are engaged in the woods during seasonal cutting and logging operations.

Through the kindness of the Plant Manager Don Maunsell, *Hydro News* was accorded the privilege of making a tour of the plant under the guidance of the assistant engineer, W. Nygren. In basic equipment and modern processing devices, we found that this mill at Dryden ranks high among the pulp-and-paper establishments in Ontario, many of which we had previously visited. The company specializes in high-grade wrapping paper, and has installed machinery which glazes and finishes this type of product at the rate of 25 tons in 24 hours.

Approximately 650 motors are installed at the Dryden mill, ranging all the way from machines of fractional horsepower employed on controls of the big 500-horsepower motors required for major operations.

Rural Extensions

Rural as well as industrial consumers will benefit greatly from the new power Hydro will bring to this section of Northwestern Ontario. Accustomed to the rapidity with which Hydro puts through a job once taken in hand, we were nevertheless amazed at the speed with which extensions to rural services in this area were being carried out by the Commission's Construction Division.

"Since February of this year," A. E. Wager, Superintendent of the Dryden District R.O.A. told us, "rural lines have been built out to ten miles north of Dryden, east to the village of Wabigoon and also to a considerable distance north of Vermilion Bay. There are now (this was only August, remember) 90 new farm services."

Hydro's rural development in Northwestern Ontario is a new venture. In magnitude, it cannot, of course, be compared with the tremendous program being carried out by the Commission in the agricultural areas of the south. It would be an understatement, however, to say that it compared favorably with the beginnings of Hydro rural development in Old Ontario. Behind all the Commission's present undertakings in the rural,

(Continued on page 30)



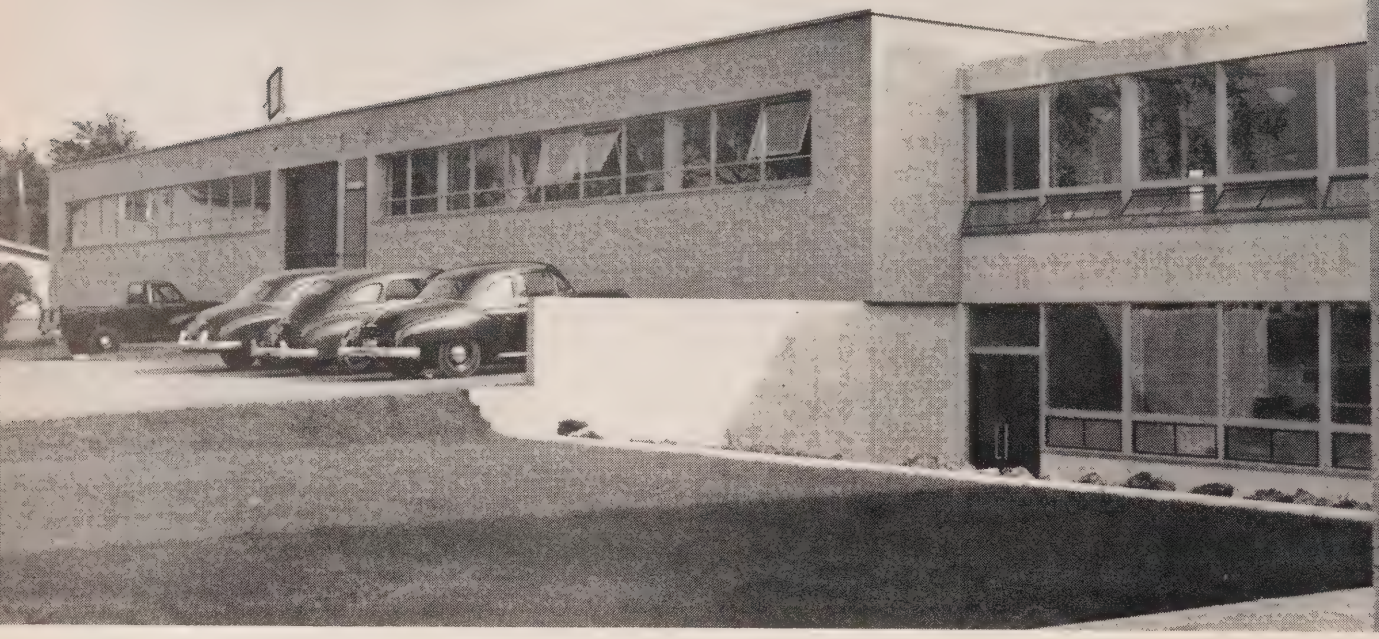
CHECKING POWER LOADS at the Dryden paper mill. Some 650 motors of varying horsepower are installed. More Hydro power will soon be available from the Moose Lake—Dryden line.



PREPARING SHIPMENTS after a run-off at the Dryden pulp and paper mill. Production is about 127 tons of paper and 50 tons of pulp a day. A specialty is high-grade wrapping paper.

Old Gives Way To New

York Township Hydro Opens Modern Structure To Accommodate Stores And Garage



by
Shaun B. McQuillan
Hydro News

THE old has made way for the new in York Township where the local Hydro-Electric Committee has proudly opened an ultra-modern structure erected at a cost of $154,000 to accommodate stores, garage, meter, repair and dispatch rooms.

Located some 300 yards north of the local administration offices at Keele and Elora Streets, the new two-storey building replaces an old galvanized-iron structure—once a farmers' market—which served for ten years as a store and garage.

Guests who inspected the up-to-date facilities, following the official opening by Reeve William Beech of York Township, included Hydro Chairman Robert H. Saunders; Loftus Reid, Toronto Hydro Chairman; H. D. Rothwell, H.E.P.C.; E. R. Lawler, H.E.P.C.; John Brown, Chairman of Scarboro P.U.C.; and many other officials of surrounding Hydro Commissions.

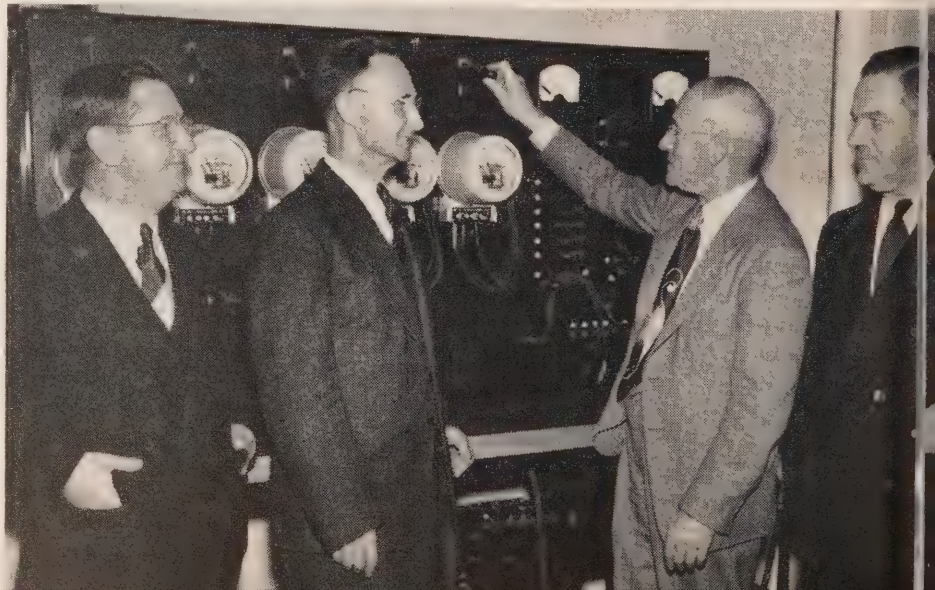
A buffet luncheon was held in the store-room after the inspection tour, followed by a simple ceremony in the main entrance hallway where Rev. A. J. Jackson, of St. Hilda's Anglican Church, dedicated the plaque.

On returning to the store-room the guests heard Walter Saunders, Chairman of York Hydro-Electric Committee and a township councillor, say that the realization of the new building was largely due "to the excellent management of our Hydro" under H. R. McClymont.

"I feel we are extremely fortunate and we should be proud to have Mr. McClymont as General Manager of our system," he said. Among other tributes to Mr. McClymont was that from Charles Spencer, Chairman of York Hydro committee from 1947, when it was first formed, to 1949. Mr. McClymont, a Scotsman from Kirkcudbrightshire, received his technical training at the University of Glasgow, and was formerly a consulting engineer.

In reply, Mr. McClymont said the stores and garage stand "as a symbol of close co-operation, and is proof of the close co-operation between all those associated with its construction."

Ontario Hydro Chairman Saunders congratulated York Hydro on its "grand building" and commented on the large percentage of window space. He said the excellent natural lighting would eliminate the need for using artificial



lighting to capacity during daylight hours, thus saving valuable electricity.

The international situation during the last few months had caused abnormal demands to be made on Hydro's resources and the utmost co-operation was, therefore, required from the people of Ontario to ensure a restriction-free fall and winter, Mr. Saunders said.

Other speakers included members of York's nine-member Township council, which forms the Hydro-Electric Committee: J. B. Parkin, Toronto architect: Loftus Reid, Toronto Hydro; and Albert Schofield of Ferranti Electric.

Facing north, the building has been constructed in an attractive hard-faced buff brick with concrete back-up, and structural steel frame throughout.

Measuring 260 feet in length, 90 feet in maximum width and 40 feet minimum, the structure has its spacious single-storey stock room situated to the east and a 90-foot-square garage on the west. In the centre is a two-storey section of offices, meter room, repair room for heater control equipment, dispatch rooms, canteen and washing facilities.

In the large stock section, space has been provided for all electrical equipment and pole line hardware. In addition, this section will accommodate anticipated increase in the amount of material required in connection with this commission's operations.

Thirty cars and trucks, of which five cars and two trucks are radio dispatched, can be housed in the garage. All offices have been accoustically treated and are equipped with indirect incandescent lighting in the approximate proportion of one 500-watt unit to every 60 square feet of space.

The total staff in the new building is 58 under the jurisdiction of General Foreman Joseph J. McLellan and Meter Supervisor C. C. Nobes.

Construction Delayed

Plans for York Hydro to have its own stores and garage go as far back as 1941 but the war and other conditions delayed construction.

"We had to start from scratch when I came here in July, 1940," said Mr. McClymont in an interview with *Hydro News*. "There wasn't a building of any kind. And there was no maintenance equipment or staff."

When the township took over its own system in 1941 the outstanding debenture issue amounted to $159,057. This, together with $36,715 in interest, was paid off in annual instalments, the final payment having been made in 1949.

Although York has the fourth largest number of consumers in Ontario next to Toronto, Hamilton and Windsor, it is essentially a residential community.

Latest available figures show a total of 27,197 consumers in December, 1949, including 25,437 domestic, 1,474 commercial and 286 industrial compared with a total of 22,108 in 1941.

Steadily Increasing Load

This year the load is steadily increasing as the number of industries increases and residential districts expand.

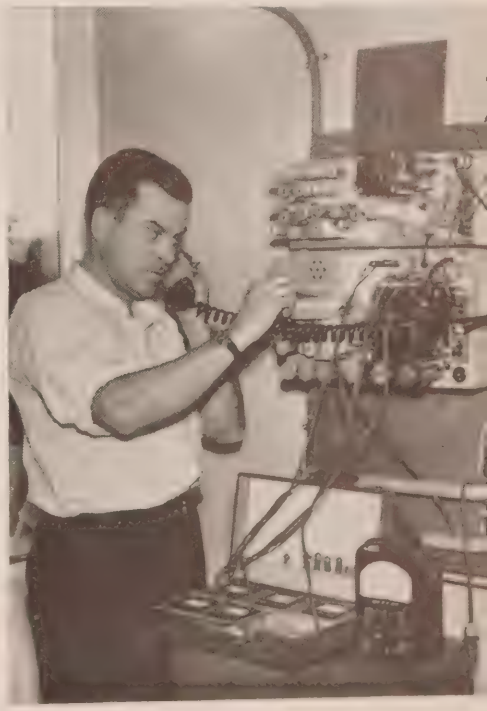
Maximum demand for 1949 was in December when the load reached 39,350 horsepower, compared to the 1941 maximum load in the same month of 21,048 horsepower. In September this year the average demand was 39,800 horsepower, compared to 33,805 horsepower in September, 1949.



YORK HYDRO DEPARTMENT HEADS chat together in front of the new building's offices. Left to right: E. A. G. Hoare, Chief Accountant; S. W. Orton, Line Inspector; Joseph J. McLellan, Line Superintendent; C. Hill, Office Manager, and C. C. Nobes, Meter Room Superintendent.

* * *

ART KAINS, radio technician in the new building, makes final tests on the recently-completed two-way radio dispatch systems.



H. R. McCLYMONT, General Manager and Chief Engineer of York Township Hydro, describes the intricacies of the meter-testing board in the new stores and garage. With him are Walter Saunders, Chairman of York Hydro, extreme left: Reeve W. Beech of York Township, and Hydro Chairman Robert H. Saunders. Meter repair section is equipped to service up to 300 meters.

Old Gives Way To New—cont'd

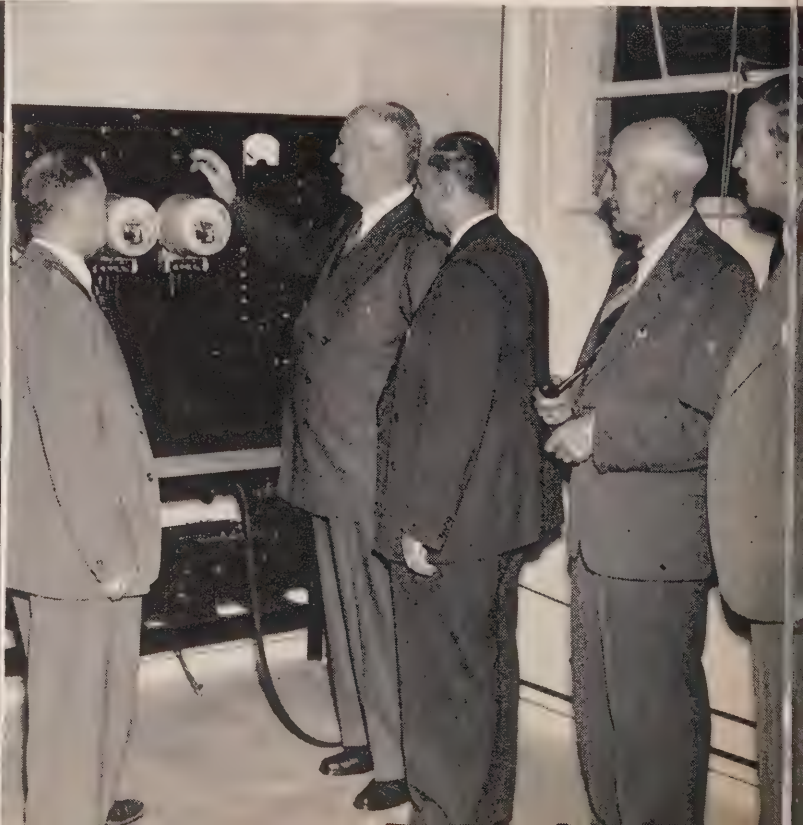


SUPERINTENDENT McLELLAN and D. A. MacGillivray, York Hydro's Chief Draughtsman, discuss the excellent facilities of the garage. Ninety feet square, it houses a total of 30 cars and trucks. Building is designed to permit addition to garage if expansion becomes necessary.

GENERAL MANAGER H. R. McClymont and Mr. MacGillivray discuss future growth in York Commission's operations. Photo was taken in Mr. McClymont's office.



EXAMINING THE meter-testing board. Left to right: G. F. Pownall, Mimico P.U.C.; Loftus Reid, Toronto Hydro Chairman; C. C. Nobes, Meter Superintendent, York Hydro; H. D. Rothwell, H.E.P.C.; E. M. Ashworth, Toronto Hydro General Mgr.





LEFT: INCOMING calls from London consumers to F.S.D. contractor are directed by Beatrice Miller to Canadian Comstock's mobile trucks through office's 60-watt ground transmitter.

★ ★ ★

RIGHT: COMPLETE HOOK-UP between 75 inter-office telephones and F.S.D. mobile units is facilitated through London P.U.C. sub-station transmitter operated by Jack Somerville.



Accent on Speed and Efficiency

Use of Mobile Radio and Telephone Facilitates Progress of Changeover Operations at London

SPEED and efficiency, two of the primary objectives of Ontario Hydro's Frequency Standardization Division since its inception a little more than a year ago, have been particularly noteworthy in London, which is at present undergoing a changeover to 60-cycle power supply. Extensive use of mobile and grounded radio telephone equipment by F.S.D. and Canadian Comstock, working in conjunction with the London Public Utilities Commission has facilitated these operations.

With time an all-important factor in this program of standardization, the convenience of mobile frequency modulated communications cannot be over-emphasized. As in any city with a population of more than 100,000 people, calls from consumers can be both numerous and widespread. By using an intercommunication system between F.S.D. area office and Canadian Comstock and part of its mobile fleet, such requests for assistance have been answered within minutes of the original call. On cut-over days, too, the operation has been speeded up considerably by the use of this system.

Basically, this network of communications consists of a 60-watt F.M. transmitter located in Canadian Comstock's area office on Piccadilly Street, and a 60-watt F.M. transmitter in the trailer cut office, usually located at the scene of the changeover district. Working on this frequency of 49.82 megacycles are two trucks and one car. Effective range of this network is said to be 25 miles. Hooked up to the system by an additional P.U.C. unit in the trailer cut-office is the London P.U.C. network with a 30-watt F.M. ground station at the Horton Street sub-station, which in turn works with 8 trucks and 3 cars on a frequency of 157 megacycles at an effective range of 10 to 15 miles.

The fact that the system used by the local utility is linked with 75 inter-office Hydro telephones, and two automatic H.E.P.C. telephone exchanges, including those of the F.S.D. office, makes it an invaluable aid to the efficient administration of this whole program.

Calls from consumers who have [illegible] changed to 60-cycle power supply are received daily by the Frequency Standardization office in London. Perhaps the trouble stems from a noisy refrigeration unit, or a faulty [illegible] motor. In emergencies a call is immediately put through to the trailer office radio telephone receiver. The trailer office, which has the Hydro mobile units plotted, can send the nearest car or truck to the house in question with a minimum loss of time.

Perhaps even more important has been the use of radio telephone equipment on changeover days, when close liaison between the local utility, the contractor and Hydro is vitally important. At such times a section of the electrical system may have to be cut and brought back into service with the minimum of delay—usually a matter of minutes. By being in close touch with mobile units placed at strategic points and the London P.U.C. control office, F.S.D. engineers, working with Canadian Comstock, can control the whole operation by having detailed and up-to-the-minute information at all times.

by
Dennis A. Dack
Hydro News



LEFT: CONTACTING TRAILER cut-office from 30-watt mobile FM station during frequency changeover operation is Phono-Superintendent R. Edwards of Canadian Comstock Co.

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RIGHT: ON RECEIVING END and directing operations from trailer cut-office at scene of the changeover is W. Patterson, Comstock's Assistant Area Superintendent, Commercial.





GATHERING ON THE TERRACE before the No. 5 District meeting at the Dundas Golf and Country Club, this group includes Stanley E. Thomson, J. A. Williamson and T. Barnes, all of Niagara Falls; W. D. Stalker, Simcoe; and D. Taylor of Hydro's West Central Regional Office, Hamilton.

Sees Acts as "Rule Books"

W. Ross Strike Urges All Local Commissioners To Be Familiar With Provincial Legislation

TO render the best possible service to their communities, all local commissioners should be familiar with the Power Commission and Public Utilities Acts which are actually "rule books" for both the Ontario and municipal commissions.

These words of advice were voiced by W. Ross Strike, K.C., Second Vice-Chairman of Ontario Hydro, when taking part in a panel discussion at the fall meeting of District No. 5 O.M.E.A. at Dundas on October 18.

Panel Discussion

The discussions dealt with the duties of a local commissioner and others on the panel, in addition to Mr. Strike, were G. W. Powell, Stamford Township, who led the discussion; F. R. Cavers, St. Catharines; Thomas Barnes, Niagara Falls and Keith C. MacLeod, Stamford Township.

Mr. Strike pointed out that, according to the Power Commission and Public Utilities Acts, the Provincial Commission was in charge of the planning and generation of power, and the transmission of that power to the municipalities of the co-operative system. The Ontario Commission was responsible also for supplying power to certain heavy load industries not served directly by the municipalities and for maintaining uniform rates throughout the province. Each municipality, he pointed out, had its retail rates set by the Provincial Commission. The latter, in turn, had to obtain authorization from the Provincial Government through Order-in-Council before proceeding with any new power development. The same thing was true of all bond issues which were guaranteed by the Provincial Government.

In the Power Commission Act, Mr. Strike said, were various clauses that dealt with specific items relating to local commissions, the investment of surplus funds and the jurisdiction of the Provincial Commission over municipalities. The Public Utilities Act, he stated, covered such matters as the application of revenues derived from the sale of electric energy to the various municipal customers and the general administration of the local utility.

In answer to the question, "What was the policy of the H.E.P.C. on investment of surplus funds," Mr. Strike replied that the municipalities should be bound by the same rules as the H.E.P.C. This meant, in brief, that local utilities and the Hydro Commission should keep themselves in as liquid a position as possible. The Provincial Commission, he said, was seriously considering asking that the Power Commission Act be amended to include the

investment of municipal funds in Dominion and Provincial securities. In this way, he stated, everybody would be on the same basis.

Other questions dealt with auditing the local commissions' books; consumer arrears; additional pensions for employees and other important points.

Another panel led by J. A. Williamson of Niagara Falls dealt with the presentation of a synopsis of the Summer A.M.E.U. conference at Bigwin Inn on Power Costs and Retail Rates. The members of this panel were Ray Pfaff, St. Catharines; H. Allan Howard, Thorold; T. Wallace Houtby, Welland; and C. E. Kirby, Stamford Township.

Constitution Discussed

D. P. Cliff, President of the O.M.E.A., reported briefly on the executive meeting of the O.M.E.A. and A.M.E.U. which had recently been called by the Ontario Hydro to discuss the power situation for the coming winter.

Mr. Cliff also spoke on the matter of drawing up a Constitution for District No. 5, which he said should be in line with the other districts, and eventually printed in booklet form.

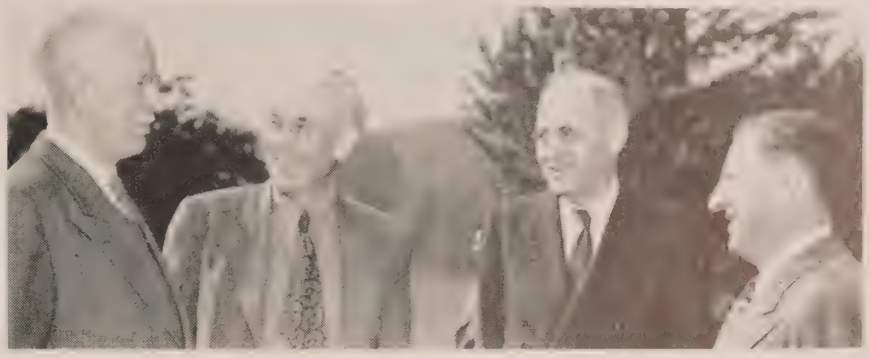
Guest speaker at the evening banquet was Rev. Crawford Scott of Hamilton, who gave a humorous travelogue on his recent visit to Great Britain and the Continent.

Hydro Chairman Robert H. Saunders, who was present in the evening, spoke briefly on the power situation, pointing

(Continued on page 30)



DELEGATES TO THE DISTRICT 5 O.M.E.A. MEETING pause at the Dundas Golf and Country Club, scene of this year's meeting. Included are K. R. Baird, Caledonia and A. McKnight, Port Dover.



DURING a short recess, these jovial delegates pause for a chat. Left to right: Loftus H. Reid, Toronto Hydro Chairman; H. O. Hawke, Galt; K. V. Bunnell, Brantford; and R. Hibbert, Toronto.

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BELOW: AFTER the afternoon session some of the delegates inspected this heavy duty mine hoist. In the group are, Thomas Barnes, Niagara Falls; T. W. Houtby, Welland; W. R. Mathieson, H.E.P.C.; Mayor J. C. Don, Dundas; C. K. Merner, New Hamburg; R. M. Durnford, H.E.P.C.















RIGHT ON THE JOI

by

Edith B. Toland
Hydro News

WITH lowered costs and reduced transportation [haz]ards as the primary objectives, Hydro engineers have made a new departure by having concrete pressure pipes fabricated right on the job while proceeding with the building of the new Richard L. Hearn Generating Station on the Toronto waterfront.

Five feet long, eight inches thick, and with an inside diameter of 78 inches, the pipe sections were poured at the rate of seven a day. Each section weighed five tons. Total length of the pressure pipeline is 1,560 feet.

In the course of the fabrication, inner steel forms were placed on end in a row (1), then 7/16" and [5/8]" diameter reinforcing steel was dropped over them (2). Outer steel forms were placed in sections around the reinforcing (see sections on ground in photo 1). Concrete was poured between inner and outer forms (3). Sections were then left under tarpaulins to cure (4). After 36 hours, tarpaulins and forms were removed (5), and the sections later rolled into place beside the trench in which they were to be placed (6).

Installation of the pipeline involved the lifting of the sections from their temporary resting-place by means of a crane (6 and 7). The end of each section was coated with an asphaltic joining compound (8) and provided with a rubber gasket before the next section was lowered into position (9). The gasket provides a tight joint between the sections, yet allows a slight expansion or contraction. A completed portion of the pipeline is shown in photo 10.

The vertical metal pipes shown in photos 9 and 10 play an important part in the process whereby water is removed from the ground during the laying of the pressure pipes. The moisture is drawn up by suction through the vertical pipes, dirt and foreign matter having been kept back by a 2-inch screen at the base of the pipe.

This method of removing water from the ground before it reaches the trench enables work to proceed "in the dry", and is much preferred to pumping out water after it has seeped into the working area.

Sloping gently along its 1,560-foot length, the pipeline descends from 6 or 7 feet below ground level at its beginning to 12 feet below ground at the ultimate discharge point. When the station's first two units are in full operation, it is estimated that about 130 million gallons of water a day will pass through this line. This figure is approximately double the average daily water consumption of the city of Toronto during a typical autumn month.











HANOVER'S NEW P.U.C. building, once a residential house, as it looks after a deft "face-lifting".

Praiseworthy Achievement

IN a ceremony marked by modest pageantry and symbolic pride, Hydro Chairman Robert H. Saunders on October 4 officially opened the new Public Utilities Commission building of Hanover, a thriving industrial town tucked in the southwest corner of Grey County.

As he cut the blue ribbon in the new, ultra-modern offices, a ceremony highlighting a series of opening-day celebrations, Mr. Saunders paid tribute to the men who built up the Hanover power facilities during its years of rapid expansion.

"We are very fortunate in this province to have such public-spirited men to guide the prosperity of their municipalities," said Mr. Saunders. "You in Hanover should be proud of your progress. With your own financial resources you have constructed, and have the amenities to maintain, your own public utilities building. It is a praiseworthy achievement."

The new two-storey P.U.C. building is in reality a renovated residential house and small warehouse; a building described by Farquhar Oliver, M.P.P. for Grey County, as having "undergone a face-lifting of very substantial character."

The $20,000 worth of "face-lifting" was certainly substantial. As a one-time house it is unrecognizable; as a commercial structure it is the ultimate in modernity.

The house front is now an attractive facade of buff brick. Old plaster walls inside have become birch-panelled wainscotting beneath an upper-half face of white textile. A typewriter and billing machine have taken the place of domestic utensils.

Superintendent Verne Snider's office displaces an erstwhile warehouse. And the administration offices, formerly in the town's library, operate behind a gleaming counter in the one-time front room of the house.

Now more than double its previous

by
Shaun B. McQuillan
Hydro News



ON HANOVER TOWN HALL STAGE, Hydro Chairman Robert H. Saunders dips into the draw box proffered him by Mayor Eric Winkler. Draw was held to find the winners of 18 prizes presented by local electrical dealers. About 400 residents attended the "Hydro-day" public meeting

size, the commission's accommodation also includes a boardroom, two stock rooms, meter room, two-truck garage, workshop, showers and washroom—a fitting indication of Hanover Hydro system's expansion in recent years.

The day's series of ceremonies began with public inspection of the new building. At the Town Hall in the afternoon 400 Hanover school children, from grade five to high school, saw a pictorial display depicting Ontario's power projects. Another feature arranged by H.E.P.C. officials was a film titled "Niagara the Powerful." Talks on Hydro were given by Charles Crease, Ted Dietrich, both of H.E.P.C. and Mayor Eric Winkler, Chairman of the P.U.C.

In the evening a reception of 100 guests was held in the Union Hotel followed by a banquet. Following congratulations from Mr. Saunders on their "grand new building" and from Mr. Oliver on "one more progressive step in a progressive town," Mayor Winkler remarked that "we on the commission today cannot claim all the credit for the progress of our Public Utilities Commission during the last few years."

He said it was the combined effort of the present commission and its former leaders, such as John Frook, Chairman from 1919 to 1943, and the late Herman Denef, Superintendent and Secretary-Treasurer from 1924 to 1949, which has molded a successful hydro system.

The former building was anything but a credit to Hanover, said Mayor Winkler, and the offices in the library caused quite a deal of inconvenience.

For their successful solution to the problem, Mayor Winkler, Commissioners William J. Cross and William H. Fischer, Secretary-Treasurer Harry Mann and



CHAIRMAN ROBERT H. SAUNDERS cuts the ribbon of new P.U.C. building. Picture includes Ione Grein; Jack Binkley, Deputy-Reeve; Adrian Eydt, Councillor; Farquhar Oliver, and Mayor Winkler

★ ★ ★

HANOVER P.U.C. STAFF, complete with boutonnieres, take time off to get together in their new office. Left to right: Harry Mann, Secretary-Treasurer; Ernest Duncan, Lineman; Ione Grein, Cashier; Jim Plantt and John Moore, Linemen. Sitting is Verne Snider, Superintendent.





WILLIAM J. CROSS and William Fischer, Commissioners of Hanover P.U.C., inspect a meter in the spacious meter section of Commission's new eight-room building.

* * *



SUPERINTENDENT VERNE SNIDER is caught here during one of the short periods he operates from his office. Most of his time is spent in supervising outside work.

* * *

HARRY MANN and Ione Grein stand proudly behind the gleaming birch-panelled counter in the Commission's new office. Old office was located in town library.



Superintendent Vern Snider and his staff have fully earned the credit and respect bestowed on them.

After the banquet, the party made its way to the new building where Mr. Saunders said it was "an honor to be present at this milestone in the history of Hanover Hydro which, like almost every other community Hydro system in Ontario, is going ahead in leaps and bounds."

"You have done a fine job," Mr. Saunders told those in the brightly-illuminated P.U.C. offices. "How fine it would have been if Mr. Denef, whose inspiration and dream this building had been, could have been with us tonight. But we should not overlook the great work by the present commission in aiding the growth of Hanover."

The final ceremony of the day, a public meeting in the Town Hall, was highlighted by a 30-minute radio address by Mr. Saunders on Station CKNX, Wingham.

Before a large representation of Hanover's 3,741 residents, he said that Ontario was faced with tremendous additional power demands. But despite these demands due to war emergency measures, a situation that had risen during the last four or five months and which could not have been prevented, Hydro was meeting every contract, the Chairman said.

"The increase in power demand in Southern Ontario from August 3, 1950, up to September 14, 1950," he stated, "equalled the combined output of the Sir Adam Beck Generating Station No. 1 at Queenston and the Stewartville plant on the Madawaska River for October 3."

Mr. Saunders said that in 10 years Hydro had increased the power supply to Southern Ontario by 952,940 hp. During the last two weeks in September the maximum primary demand in Southern Ontario had been as much as 400,000 horsepower (298,000 kilowatts) higher than a year ago—an amount sufficient to take care of the total demands for Toronto and three-quarters of Leaside, that busy industrial centre in the northeast suburbs of Toronto.

"Ontario is power hungry," continued Mr. Saunders. "It is power hungry because it is prosperous. We should make it our object to ensure that this expansion and prosperity continues, and we can do it only through the co-operation of the people of Ontario in conserving power. Cut down consumption by one-third per capita and we shall get by."

Other speakers at the Town Hall meeting included Farquhar Oliver; Mayor Winkler; Commissioners W. J. Cross and W. Fischer; D. G. Ferguson and Charles Crease, Georgian Bay Region; and Robert Butter, President of the A.M.E.U. and Manager of the Owen Sound P.U.C.

An excellent rendition of "Deep River"

(Continued on page 28)

This and That

JOINING WITH the many colleagues and friends of Charles Vick, we wish him long years of fruitful endeavor as he retires after 29 years of loyal and faithful service with the Commission.

If we were asked to give our own impression of Charlie in a few words, we would employ an old and, indeed, a trite phrase and say, "He is a scholar and a gentleman," in the truest sense. We have known him since the first day on which we joined the Commission and we know of no phrase that could be more fitting. In the minds of those who are privileged to know him well, he is the embodiment of all those qualities that find expression in the highest form of public service which, down through the years, has been synonymous with Hydro in Ontario.

Working in the same room as Charlie for a number of years, we became deeply conscious of the untiring and painstaking effort he applied in carrying out his important responsibilities associated with the preparation of the Annual Report. Frequently, he had to undertake other duties which called for an intimate knowledge of the functions and operations of Hydro.

We recall very vividly his kindly and helpful counsel when we were setting out along a path strewn with the pitfalls of watts, kilowatts, horsepower, load factors and many other gremlins of that character. On a number of occasions, he guided us safely through bewildering and seemingly fog-bound valleys of technicalities and on to the brighter uplands of clearer understanding. As an engineer as well as a man who can fully appreciate a layman's dilemma, Charlie, on many occasions, has demonstrated an ability for giving analogies which remove much of the mystery from many technical terms.

With the passing of time, our respect and admiration increased as we discovered the amazing acumen and versatility of this tall, slim, quiet-spoken and unassuming man. We discovered, for example, that he is much more than the author of many a well-turned phrase. Over a period of years, we found that his talents found full expression in many fields of endeavor. He can, when necessary, more than hold his own as a draftsman, an architect, a landscape gardener, home builder, decorator and motor mechanic or he can turn with equal facility to piano tuning, wood carving, photography and other arts. At the same time, he has given freely of his time and talents in serving his community on the local board of education and on town planning groups.



C. J. VICK

With these many avenues of interest beckoning him, Charlie is likely to find his years of retirement filled with active and constructive endeavor.

We understand that, in the near future, he and his gracious and capable wife, will be taking a boat trip to their native England.

All his friends and colleagues at Hydro are not saying "Goodbye." It is merely "Au revoir," for Charlie is the kind of person who will find a warm welcome awaiting him any time he may visit the Commission.

We hope these visits will be frequent.

IT'S NOT NEWS when a cat catches a bird, but it is news when a bird catches a cat.

Here's a true story which, as far as we know has not been published in an paper. Therefore, we can chalk up an other scoop for *Hydro News*!

Not so long ago, a lady in Toronto di covered a lame duck. There are many lame ducks around these days, but we are referring to a bona fide bird! She took the duck into her where there are a Persian cat and a d There, the bird received appropriate dical attention and soon he was waddlin around the house. This bird must been very public relations conscious he exercised amazing discretion in actions and was soon on the most cordial terms with all members of the household, including the cat and the dog.

Then came an important day in th life of the cat—a blessed event and th Persian kittens joined the family. V soon the kittens were scampering around and then one of them managed to of the house and wandered away. search was instituted without avail. Then, in desperation, the lady of the hou turned to the duck and said: "Joe, and find Patsy and bring her home."

Joe let go with a few quacks, waddled out of the house and down the stree Within less than an hour, back came Joe, carrying Patsy by the tail. H waddled into the house, dropped Pat at the feet of the lady, ruffled his feathe let off a couple of loud quacks and climbed into his box.

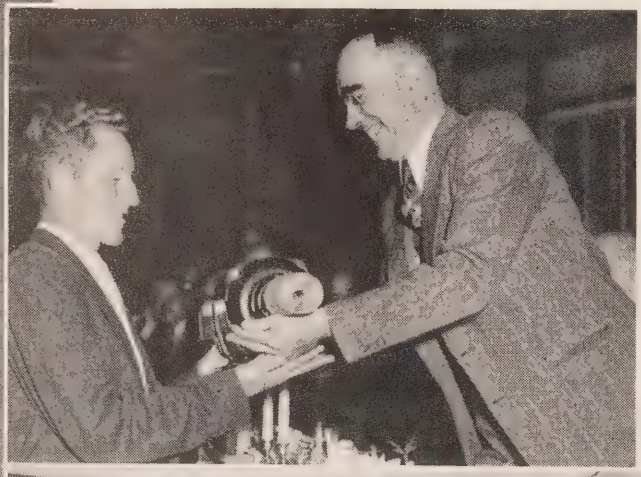
And, there you have it. And I repeat, that is a true story.

AND SO, Santa Claus is back in town That reminds us, how many have finished their Christmas shopping? We know of at least three people who finished the job by the end of October and who are now doing the wrapping and sticking on the Christmas seals. Incidentally, one of these folks has his cards in stamped and addressed envelopes, ready to mail. Our own record is a little better this year; we finished half our shopping by the end of October. Perhaps, we are braggi but we made a New Year Resolution at the beginning of the year and, fo once, we are keeping it. This resolution calls for the job being finished by D cember 15. Now, we must turn attention to the Christmas issue of *Hyd News* which is already in course of pro duction. We think you'll like it.

by The Editor



International Plowing Match



UNDAUNTED by wet weather, 100,000 people attended the 37th International Plowing Match held recently at the Nottawasaga Valley Farms near Alliston, Ontario. Approximately 700 entrants participated in the 40 different plowing competitions for horse and tractor classes at this year's match. In addition to witnessing these events, visitors were able to view the biggest farm machinery display in the Dominion, and also inspect many interesting educational exhibits and demonstrations.

The Commission's exhibit this year attracted a large number of spectators who showed keen interest in a series of displays depicting the role of electricity on the farm as well as Hydro's tremendous expansion program.



TOP: Entrance to the tent housing Hydro's exhibit which featured a number of interesting displays depicting the Commission's record-breaking expansion program.

CENTRE: C. E. Crease, Consumer Service Engineer, Georgian Bay Region, presents electric motor to prize-winner Norman Tyndall of Richmond Hill on behalf of the Commission.

LEFT: Always a subject of interest to consumers. A section of the display at this year's "match" stresses the importance of having safe and adequate wiring.

UNDERGROUND NETWORK

by
Dennis A. Dack
Hydro News

BACK in 1930-31 the London P.U.C., brought into operation its underground network system designed to supply uninterrupted power to one of the city's most important sections —the downtown business district.

Initial plans called for a continuous electrical supply to the city's most concentrated shopping district, its major office area, and a section of the traffic control system. With Toronto, it became one of the first cities in Canada to install this type of network, patterned after systems already in operation in many parts of the U.S.A.

Recently, with the Commission's Frequency Standardization Program underway in London, engineers were faced with the task of planning systematic cuts on this network, which was so closely interlaced that it was thought almost impossible to interrupt. It is a tribute to both P.U.C. and Ontario Hydro engineers that the task was carried out during September and October as smoothly as it had been planned in theory.

Watching the operations closely were Toronto Hydro engineers who will be confronted with a similar situation in the city's main business district where standardization begins in approximately two years time.

Perhaps a clearer picture of the work that is involved in standardizing the frequency of such a congested area can be obtained by studying the construction of this network.

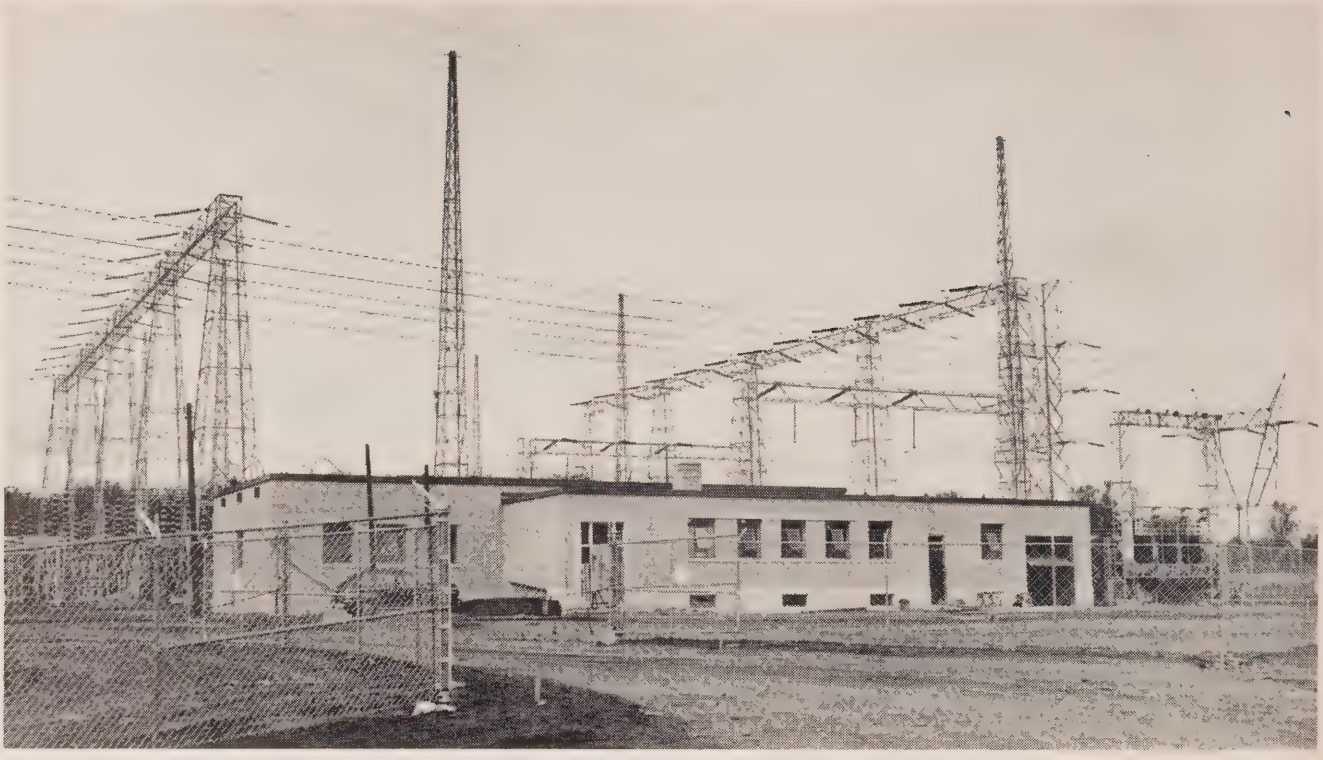
Five 13,200-volt feeders run into the London downtown underground system, a small part of which is linked by overhead wiring. Thirty 3-phase transformers, each rated at either 300 or 500 kva, are all interlaced to ensure continuous service. For the same purpose the secondary circuits are on one grid.

In planning the cuts so as to ensure minimum inconvenience

(Continued on page 30)

SECTION OF UNDERGROUND network in London's business section is supplemented by overhead feeders. London P.U.C. linemen, above, are seen connecting new transformers preparatory to cutover in one section of the city. Stan Miners, (inset), of the local commission, is cutting main feeder lines in underground transformer vault supplying downtown store.

TO SPEED CHANGEOVER it is sometimes necessary to by-pass major pieces of equipment. Below—One of Hydro's 250-kilowatt frequency changers feeds 25-cycle power to elevator motors in department store until they can be conveniently changed over for operation at 60 cycles. London P.U.C. lineman is re-connecting overhead feeder after cutover.



MINDEN SWITCHING STATION is important point in Hydro's new 60-cycle system.

NEARING COMPLETION

Minden Station Key Link With Ottawa River Plants

by

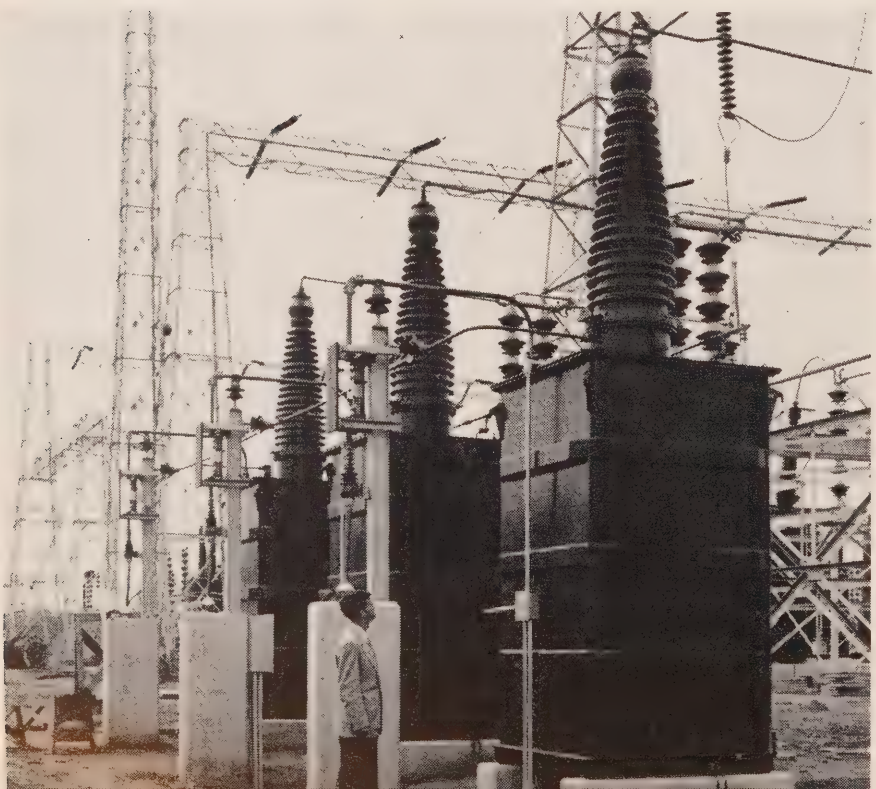
Dennis A. Dack
Hydro News

LOCATED in the heart of Ontario's scenic Haliburton district, just 8 miles from Minden, one of Hydro's key switching stations is rapidly approaching completion.

Taking its name from the nearby town of Minden, the station is an all-important link in the transmission lines which are being built to bring power to Southern Ontario from Des Joachims and later from La Cave—both major developments on the Ottawa River, approximately 94 and 150 miles away respectively.

The construction of Minden Switching Station has brought an imposing array of steel towers and oil circuit breakers to this pleasant site overlooking Lake Kashagawigamog. Two lines between Des Joachims and the station have been in operation since last June 28, when that development was placed in initial service. This 60-cycle power is switched to the Kipling Transformer Station near Toronto, and Burlington Transformer Station, 8 miles from Hamilton. As more power becomes available from the Ottawa Valley, Minden S.S. will play a major role in Ontario Hydro's new "60 system," with additional double circuit lines running to the Essa Transformer Station, near Barrie; thence to the Westminster

(Continued on page 27)



THREE POTENTIAL TRANSFORMERS, first of their type to be used in Canada, step-down the 230,000-volt power to provide suitable voltage for the station's service supply.

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



It's candy time! Candies for parties, for the bazaar, for Christmas. It's easy to make it at home especially if you own a candy thermometer or if you use a package of mix. You might even go into the candy business as a hobby. Mrs. Julia Stevens of New York started making fudge on a hot plate for tea parties twenty years ago. Today she owns a business turning out ten million pounds of candy a year.

* * *

To prepare peanuts for peanut brittle buy the small ones with the brown skin, (since they taste better in the candy), but be sure and remove the skins. Roll the peanuts between two strips of paper towelling, then pick out the skins using a damp cloth.

* * *

Always use a wooden spoon to stir the syrup mixture for candy, but do not use it in a circular motion; move it back and forth across the bottom of the pan and push the crystals from the sides of the saucepan with it.

* * *

An orange or an apple placed in the covered crock or tin helps the fruit cake to mellow and keeps it moist. To prevent mold, sprinkle a few drops of brandy on the surface of fruit cakes and plum puddings.

* * *

There's economy in dried fruits—and they're good for you. If dried fruit has a tough skin soak in hot water 2 or 3 hours, allowing 3 to 4 cups of water to each cup of fruit. (If dried fruit has a thin skin and soft flesh, it need not be soaked.) Cook in soaking water until tender. Bring to the boiling point and simmer about 30 minutes. Taste for sugar and tartness. They may require ¼ cup sugar and ½ sliced lemon per pound.

* * *

To improve cornstarch puddings, beat with Dover egg beater after cooling slightly. This beating makes the pudding light and fluffy.

All baking powders are not the same. When the kind of baking powder is not stated in a recipe, the amount refers to single-acting powder (such as "Magic"). If we use double-acting baking powder (such as "Calumet"), we reduce the amount to almost one-half.

* * *

Barbara asks if she can substitute canned lemon juice in making lemon sauce. Yes, you can substitute 1/3 cup canned lemon juice for juice of one lemon. However, the grated rind helps to make a tasty sauce too.

* * *

More cake! We get higher cakes when the sides of the pan are not greased for layer cakes and flavored cakes such as Chocolate, Vanilla, and Spice. We do grease the bottom of the pans with shortening or salt-free dripping.

ENGLISH PLUM PUDDING

½ lb. sultanas (dark)
½ lb. seeded raisins
½ lb. suet (chopped finely)
2 lbs. currants
½ cup mixed peel (chopped finely)
½ cup bread crumbs
½ cup almonds, shredded
½ cup cider or grape juice
1 cup milk
1 cup brown sugar
¼ tsp. salt
1 tsp. nutmeg
Juice and grated rind of 1 lemon
6 eggs
2 cups all-purpose flour

Mix fruit, suet, nuts, crumbs, milk, sugar and juice rind of lemon. Let stand overnight; then add beaten eggs, cider, and flour sifted with nutmeg and salt. Place in greased soup cans, cover with waxed paper and tie with string. Steam 2 hours. Serve with hard sauce. (This pudding will keep indefinitely. Steam again for 2 hours before serving.)

Difficult to believe! There's one kind of "dough" we wish would never stick to our fingers—biscuit and pie dough. To get it off pick up some flour and rub between fingers.

* * *

Worth remembering! The tea biscuit dough, homemade or from prepared mix, may be overmixed or kneaded too long. Result: tough biscuits.

* * *

No sour milk or cream for special recipe? Just add 1 tbsp. vinegar to 1 cup sweet milk or cream. Let stand in warm place for a few minutes.

* * *

Don't wash the pastry cloth, on which you roll out dough, in anything but clear cold water. It may be rinsed in warm water, but beware of any flour in it that may become pasty if water is hot.

* * *

To brown cocoanut, spread in thin layer on cake pan. Brown in hot oven of 400 degrees. Watch carefully and shake pan frequently to prevent burning.

* * *

For that smooth, firm texture of pumpkin pie filling, **scald** the milk then stir into pumpkin and beaten eggs.

* * *

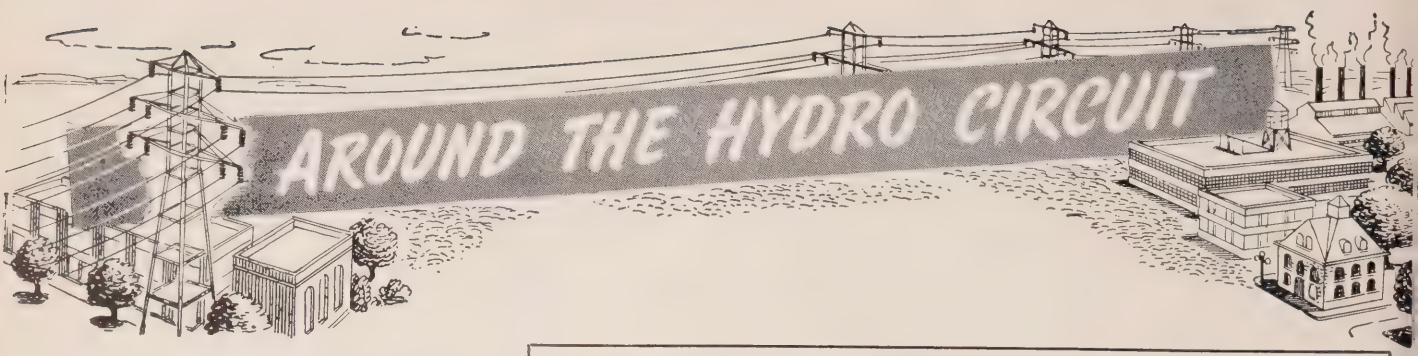
Only wax paper cartons or covered refrigerator dishes should be used as refrigerator containers. Paper bags and over-sized utensils absorb cold and space—Avoid wasting electricity in this way.

* * *

Quick-cooking desserts may be prepared economically on surface elements, with no waste of electricity. Make milk puddings on the element turned to OFF position as soon as you have brought the milk to simmering point. Fruit dumplings and dried fruits are easy to cook too.

* * *

Easy-to-make ice cream powders make homemade ice cream an easier thing than you ever dreamed about. These mixes in their various flavours as well as numerous ways of serving can give an endless variety of cold desserts.



Start Removing Overhead Wires

REMOVAL of wooden Hydro poles with overhead wires from Toronto streets was started recently, according to an announcement by Mayor Hiram E. McCallum.

Certain Toronto Hydro crews who were engaged in moving essential services for street widenings, subways and other projects have been freed to devote their whole time to the removal of the overhead wires, the Mayor stated.

He said the work would start on such cross-town streets as College, Dundas and Queen where they cross Yonge Street. A certain amount of preliminary planning has already been done on College Street.

Surveys are being made to discover whether there are any obstructions to prevent the wires from being placed underground. After this has been done, contracts will then be let for the digging of trenches, construction of manholes and the laying of conduits. When this has been completed, crews will then move in to take down the poles and wires.

In order that industry will not be inconvenienced, some of the change-overs from overhead to underground will of necessity have to be done on week-ends.

SIMCOE SUBSTATION NOW IN OPERATION

A new municipal substation was recentiy placed in service in Simcoe. The new substation will serve the north end of the municipality as well as the industrial area in the former Army Camp, including the plant of the Leamington Tobacco Sales Corporation. Present capacity of the station is 1,500 kva, but on changeover to 60 cycles it will be increased to 2,700 kva.

EXTEND SERVICE TO GARDEN ISLAND

Service was recently extended from Wolfe Island to Garden Island in the Kingston Rural Operating Area according to a recent announcement by Area Manager W. J. Montgomery.

Acton Superintendent for 32 Years



A pioneer in the public utility field and a prominent citizen of Acton, Charles W. Wilson, Superintendent, of the Acton Public Utilities Commission. died suddenly on October 25.

Mr. Wilson was born in Eden Mills, and carried on an electrical business in Guelph before moving to Acton in 1918 to manage the hydro system. At that time the local commission was only five years old with a load of 150 horsepower. During the intervening years he has watched it grow to its present load of almost 3,000 horsepower. When a waterworks system was installed, the present Acton P.U.C. was established and Mr. Wilson became Superintendent.

In 1945 he was presented with a medal from the Canadian Electrical Association, for saving the life of a lineman with the Acton Commission.

Taking a great interest in community life, Mr. Wilson was prominent in Masonic circles and a Past Master of Walker Lodge. He was also a member of the Acton Fire Brigade and the United Church.

Surviving are his wife, the former Margaret Duncan; a son, William; two daughters, Hazel and Doris; two grandchildren, and five sisters.

OFFICE EXPANSION UNDERWAY AT SARNIA

A $35,000-contract was let recently for alterations to the premises of the Sarnia Hydro-Electric System, while it is announced also that an additional $4,000 will be expended for wiring and lighting fixtures and the installation of a hoist and a vault. Work is scheduled to be completed by mid-December.

The section now housing the system's office will provide an expanded sales area. The entire interior will be redecorated, while the front will be altered to present a uniform appearance.

HYDRO PURCHASES HARROW PROPERTY

Due to the extension of service in the Harrow Rural Operating Area, Hydro recently purchased additional property in Harrow.

This new property will provide space for the storage of poles and other equipment needed in the maintenance and extension of service in the Harrow and Amherstburg rural areas.

Provision is being made for construction of a railway siding, a storage building, and unloading platform when these facilities become necessary.

WEST LORNE COMMISSIONER DIES

MEMBER of the West Lorne Public Utilities Commission and a prominent citizen of the village, John R. Milner, 45, died recently following a two-day illness. Born and educated in West Lorne, Mr. Milner owned and managed the Milner Turned Goods, Limited. Until 1947 he also operated the Milner Plumbing and Heating Company.

He joined the West Lorne P.U.C. in 1939 as Waterworks Superintendent, and in January, 1949, was elected to the first of his two terms as Commissioner.

Actively interested in community affairs, Mr. Milner belonged to a number of fraternal organizations, including the Lorne Chapter, R.A.M. He was a member of Grace Anglican Church at West Lorne.

Surviving are his mother, Mrs. John E. Milner; his wife, the former Elva Gray; one daughter, one son, and two sisters.

A LITTLE OF EVERYTHING

At St. Thomas, electric power has twice been cut off this year by reason of squirrels short-circuiting high tension wires. Hydro officials are all burnt up over this, but not as much so as the squirrels. (*Toronto Daily Star*)

NEARING COMPLETION

(Continued from page 24)

Frequency Changer and Transformer Station near London and also back to Des Joachims.

Completion of the present program of line construction is scheduled for 1952, and building of the $2,500,000 Minden Station is ahead of schedule. Already, 550 circuit lines of transmission lines are in operation from Des Joachims. This has brought into use four of the station's twelve oil circuit breakers, two incoming and two for the outgoing lines.

One of the initial problems connected with this project was finding a reliable source of station power supply. The Minden rural line was available and has been used as one source. As with most rural lines, however, adverse weather conditions can often interrupt service. It was partly for this reason that three special types of 230,000-volt potential transformers were installed. While the main use for these units is in checking relays and metering, they have been designed to step down the 230,000-volt input to supply the station with a suitable voltage for a service supply. It is believed that these 14-ton, oil-filled, 230,000-volt potential transformers are the first to be used in Canada for measurements and with a capacity to furnish a small power supply in one unit.

The main control building has been constructed of attractive yellow brick to be in keeping with the natural beauty of the surrounding country. Permanent housing for the station operators is also located on the site. Landscaping is planned for a later date. Interior of the station building, from which the circuits will be controlled, is in various stages of completion. Eventually it will house all the necessary relaying communication equipment and carrier current facilities, helping to make Minden S.S. a major contribution to Ontario Hydro's rapidly expanding 60-cycle system.

To Albert Jennings

Tribute to Veteran East York Commissioner from Warren P. Bolton, Chairman, Windsor Utilities Commission (Hydro Division) on Mr. Jennings' 74th Birthday, November 13, 1950.

TO a friend like you a birthday thought
Is hard to express—it can't be bought.
So instead of a regular card I'll send
The feelings I have for a darn good friend.

For a number of years I've listened to you
Expounding the theories you believed to be true.
For a plug in the bathroom or a plumber's complaint
There was always an answer and it never came late.

Be it Saunders or Manby or Challies or Strike
You are always prepared to support what is right.
And going beyond what your duty might be
You always assisted a green horn like me.

These things may seem small and minor to you
But it still means a lot to a guy that is new.
Your advice is most valuable and very well taken
And we all now are hoping for your first acclamation.

With fellows like you—Bert Merson and Reid
We are always assured of a good one to lead.
So carry on Albert—with birthdays all fine
With best wishes from others—please accept mine.



ALBERT G. JENNINGS

New Hydro Building For East York



Copyright—Shore & Moffat, Architects

CONSTRUCTION OF a new Hydro administration building on Memorial Park Avenue is now underway, according to Melvin A. Gough, Secretary of East York Township Hydro-Electric Commission. Plans for the building, which is expected to be completed next spring, have been approved by the Ontario Municipal Board. The new structure, which will be 150 feet long by 44 feet wide, will cost approximately $130,000 and will be named the A. G. Jennings Building, in honor of the present Chairman, who has been a member of the East York Commission since it was founded 25 years ago. The present administration building has become inadequate, officials point out.

WORTHY ACHIEVEMENT

(Continued from page 20)

by the Hanover Musical Society Chorus and a draw for 18 prizes donated by electrical dealers rounded out a memorable day in the local Commission's 33 years of operation.

Progress of the Commission since its modest inception in 1917 is a fitting barometer of Hanover's growth. In that year a contract was signed with the H.E.P.C. for 300 hp. By 1942 the total debenture debit of $87,500 was finally paid, and the average load was 1,370 horsepower. In 1948 it was 2,200 horsepower and today a load of 2,700 horsepower is not unusual.

Earnings Increased

Earnings of the Commission increased from $56,000 in 1948 to $79,000 in 1949 and it is anticipated $80,000 will be topped by the end of 1950. Cost of the new P.U.C. building was financed by an $80,000 surplus, accrued during the last five years.

Hanover doesn't claim to be a boom town, but it is recognized as one of the most progressive in Western Ontario. In 1918 the total number of consumers was 436. Today there are 1,040 domestic and rural consumers, 174 commercial, and 34 industrial—a total increase of 86 over last year's figure.

One substation and 14 miles of transmission lines supply power throughout an area of 520 acres in which there are nine factories, three saw-mills, three textile (hosiery) mills, two creameries, one produce and chicken hatchery, a brass foundry, one flour mill, cereal and feed plant.

Superintendent Snider and his three linemen, Jim Plantt, John Moore and Ernest Duncan, are responsible for the maintenance of all the P.U.C.'s facilities, meter checking, and the Water Works. Mr. Snider and his multi-duty experts, and Hanover's new P.U.C. building, stand as a symbol of the Commission's determination to keep pace with the progress of this little community nestled in the rolling hills of Grey County.

TESTING DEPRECIATION OF PAINT REFLECTION

Hydro's Laboratory, in conjunction with the Toronto Board of Education, will make measurements of the reflectance of painted surfaces at intervals over a period of years. The tests will be made in various schools throughout the city and will provide data on the rate of depreciation of reflectance. The information will be of use in planning lighting and for the determination of repainting schedules.

Power Versus Demand

DOMESTIC consumers used approximately 20 percent of Hydro's total energy output during 1949, M. J. McHenry, Director of Consumer Service, told members of the Canadian Association of Consumers during a recent address in Toronto.

This fact was revealed by an analysis of Hydro's load for the past year, the speaker pointed out. The review also showed that industrial customers used almost 70 percent of the Commission's total production while commercial users purchased 7¼ percent and rural customers took 2¼ percent.

Although demands of all classes of customers were registering phenomenal increases, it was obvious that industrial load growth would continue to form the major portion of the total demand, Mr. McHenry predicted.

"This will depend, of course, on the extent to which Canada's production of war materials is superimposed on the present heavy peace-time program," he added.

Referring further to the increased demand for Hydro service "which has grown to such an extent as to be gratifying on one hand, and yet embarrassing on the other," he emphasized that the growth in the Commission's load was a measure of the industrial growth of this province and the parallel growth in population which is setting "an all-time record."

In this connection, the speaker pointed out that the province now had over 12,000 manufacturing concerns, all of which were employing labor and calling for materials in greater volume.

During the past two years, Ontario's population which was now in excess of 4,500,000 had increased by well over 200,000. This, in turn, was reflected, to some extent, in the increased activity in home-building.

"For instance, in 1948, we added 26,000 new homes, while in 1949, a total of 31,000 new dwellings were built and the figure for 1950 is expected to be even greater," he stated.

Thus, Ontario Hydro was pressing forward with an unprecedented program in connection with the development of new power resources in order to meet this increased demand.

"Until the demand has been met and a reasonable margin of surplus has been established, there will be no let-up by either the Ontario Commission or the local commissions that attend to the local distribution of power in the cities, towns and villages of this province," Mr. McHenry continued.

Earlier this year, it was believed that sufficient power would be available to meet this augmented consumer demand when three large power projects, notably the great Des Joachims project on the Ottawa River, were brought into operation. However, the war in Korea set up a train of events during the mid-summer resulting in a steadily-increasing tempo in power requirements.

Dealing with the power situation during the next few months, Mr. McHenry warned that "the inevitable winter peak which is the testing time for all electrical utilities," was approaching.

"Barring unforeseen emergencies, we are hopeful that the additional resources which will be added in the next several months, will be sufficient to see us through the coming winter," he stated.

In concluding, the speaker urged consumers to "contribute a goodly measure of help by their voluntary efforts to avoid waste and unnecessary use."

"In this way, it is hoped that it will not be necessary to resort to mandatory restrictions in the use of power or to cut-offs such as have been necessary in the past," he said.

Harnessing the Wind

USE of the wind to manufacture electricity is not new. Especially out on the Prairies one sees the windmill contraptions which provide power for the farmstead.

The Republic of Ireland, however, is going in for wind-produced electricity on a wholesale basis. Surveys now are being made on the west coast of County Donegal. If the results are satisfactory, the study will be extended all along the west coast of Ireland, from Donegal to Kerry.

The country should be suitable. The strong west winds have blown over the rugged coast of Ireland down through the ages, bringing little of value to that land except rain—and usually too much of it. There are plenty of high hills upon which to erect the electricity-making mills.

Southern Ireland is largely agrarian. If it is to be industrialized it needs power, more than can be provided by its rivers and by peat. Wind and water are the cheapest sources of electricity. (Windsor Star)

Lighter Lines

Bud: "I notice you are taking $3,000 for tips off your income tax. You can't do that."

Lou: "Why not? I haven't had a winning horse all season."

About the only thing a woman wouldn't wear on a hat is a price tag.—Edmund J. Keifer.

Peter: "By the way, do you know where I can get an apartment? I'm desperate.'

Paul: "Apartment? Boy, you're getting soft. Why don't you live out in the open air, let old Mother Nature cover you with a blanket of stars and have the blue firmament above as a roof?"

Peter: "Frankly, I had in mind something a bit smaller."

Women haven't changed much in the last ten years—except that some of them are now three years older!

Preacher (at close of sermon to one of his deacons, half asleep): "We'll now have a few minutes of prayer. Deacon Brown will you open?"

Deacon Brown: "Open? I just dealt."

Did you hear about the girl who climbed the ladder of success stare by stare?

Pappy: "You been seein' Nellie nigh onto a year. What are your intentions—honorable or dishonorable?"

Hillbilly: "You mean I got a choice."

To flirt with pretty girls is wrong. I don't.
Wild youths chase wine, women and song. I don't.
I kiss no girls not even one.
In fact I don't know how it's done.
You wouldn't think I had much fun.
I don't.

Understanding girl: "Does your wife find you entertaining?"

Husband: "Not if I can help it."

Automobile: a vehicle that your son can drive into a garage on the last drop of gasoline.

A man who believed he was a dog went around barking. One day a friend advised him to try psychoanalysis. Some months later, they met again. Discovering that the man had been visiting a psychiatrist, the friend inquired how he felt.

The man replied, "Oh fine. I've never felt better. Just feel my nose!"

If it wasn't for her Adam's apple, she wouldn't have any figure at all!

"M'm! I'm a bit doubtful about giving the job to a boy who's left six jobs in twelve months, as you have."

"Yeah, but don't forget sir — I didn't leave any of 'em voluntarily."

An efficiency expert is a guy who tells you how to run your business, but is too smart to start one of his own.

A very tired clerk had just finished pulling down several blankets from a shelf until only one was left. Then the customer remarked, "I don't really want to buy anything today. I was only looking for a friend."

"Well, madam," said the patient clerk, "I'll take down the last one, if you're sure he's in it."

Time flies—especially between payments.—A. T. Spring.

"My dad takes things apart to see why they won't go."

"So what?"

"You'd better go."

A co-respondent in a divorce case is a fellow who wishes half of the things he's accused of were true.

"I feel so discouraged sometimes," the girl said. "I think I'm going to wind up an old maid."

"That I've got to see," the boy said. "I never saw an old maid wound up."

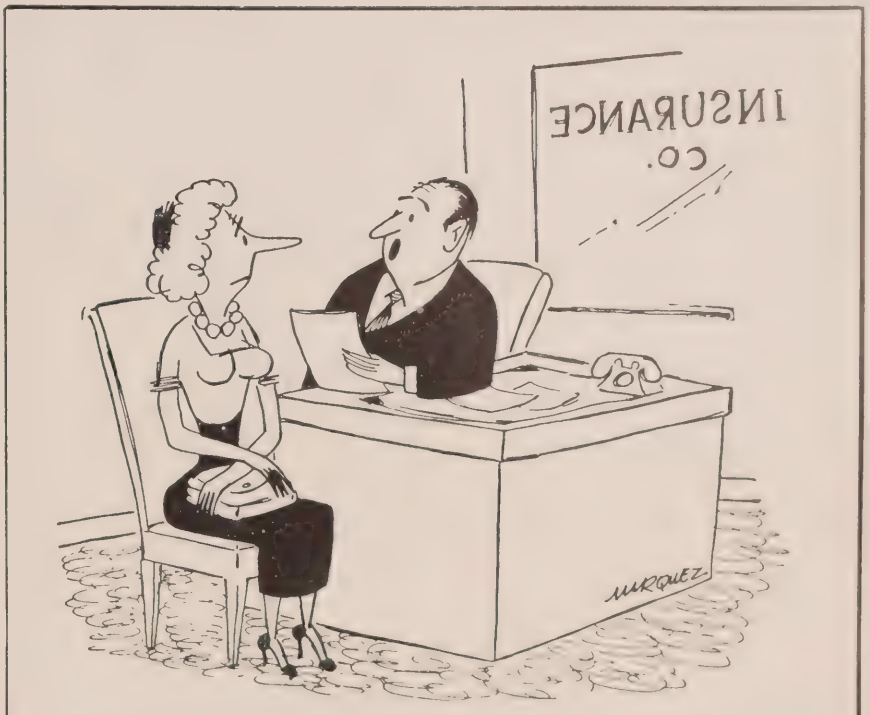
DR. KILDARE! CALLING DR. KILDARE! "You're wife found out about last night. Prepare for surgery."

"But I'm still a young man compared to an old girl friend of mine who was once the toast of Broadway," reminisced an old trouper. "Last time we met she told me she had just had her face lifted for the tenth time. It worked out fine, she said, except that every time she lifted her eyebrows, she pulled up her stockings."

I call my girl, Income Tax—she has such a staggering figure.

A man reached the depths of disillusionment. He spent two hundred dollars on a permanent cure for halitosis and then found out that no one liked him anyway.

Judicious use of brakes and brains, Precludes a lot of aches and pains.



"We've decided to give you a policy on which we pay you $55 a month not to drive your car!"

—REPRINTED FROM COSMOPOLITAN

Association Sets Record

MEMBERSHIP of the Association of Professional Engineers has set a new record, President E. V. Buchanan, General Manager of London Public Utilities Commission announced recently.

During the present year 480 engineers have been admitted by the association council increasing to 8,285 the total membership. In addition, 3,500 student and under-graduate engineers are affiliated. The association, under provincial statute, is the licensing and administrative body for professional engineers. The council at four meetings during the year approved the applications of 1,360 persons for membership. Of the 480 just admitted, electrical and mechanical engineers led the list with 160 and 140 respectively. Eighteen were mining engineers.

The final meeting of the 1950 council, a 19-man board which administers the association's affairs, was held for the first time in the council chamber of the association's new headquarters at 236 Avenue Road. The 1951 council will be elected by membership vote late in December, and the annual meeting will be held January 26 and 27 at the Royal York Hotel, Toronto.

SEES ACTS AS RULE BOOKS

(Continued from page 15)

out that the Commission hoped that the people of Ontario would continue to co-operate as they had in the past and that, barring unforseen circumstances, he believed Hydro would get through the coming winter without restrictions or cut-offs.

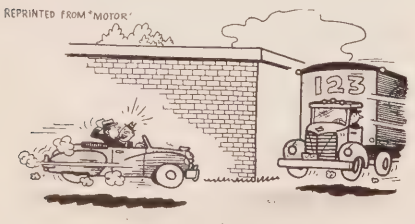
During the business session the following resolutions were passed:

RESOLVED: that serious consideration be given by the O.M.E.A. to the production of a manual of instructions for all Commissions and commissioners.

Resolution from Welland Hydro Commission:

We recommend to the H.E.P.C. that when their inspector is called in by local industries to inspect additional connected loads, that the local commission receive a copy of his report; and that the Secretary forward a copy of this resolution to the O.M.E.A. for presentation at the District meeting on October 18.

The following officers were elected for the ensuing year: Chairman, William Waterson, Welland; Vice-Chairman, Roy Pierson, Brantford Township; Vice-Chairman, Keith C. MacLeod, Stamford Township; Directors: Dr. Fred Barron, Paris; F. R. Cavers, St. Catharines; Thomas Barnes, Niagara Falls; W. B. Elliott, St. Catharines.



"Just spent $298.60 on a complete overhaul. I'm through with car expenses for a while"

NEW MANAGER AT INGERSOLL

APPOINTMENT of Douglas M. Seath as Manager and Secretary at Ingersoll Public Utilities Commission was announced recently. Mr. Seath, who succeeded E. A. Washburn, took over his duties on October 1.

Mr. Seath's home was originally in Aurora. Upon completing High School in 1939, he enlisted with the R.C.A.F. and served overseas 4½ years as Engineer in charge of squadron maintenance. He studied at Dagenham Technical College in England and received the Higher National Certificate in Mechanical Engineering from the British Institute of Mechanical Engineering.

From 1945 to 1949 Mr. Seath attended the University of Toronto and graduated in 1949 in Electrical Engineering. Since that time he has served as Electrical Engineer for the St. Catharines Public Utilities Commission. Mr. Seath is married and has one daughter.

UNDERGROUND NETWORK

(Continued from page 23)

to customers the Frequency Standardization Division of Ontario's Hydro split the network into five sections. In some instances, where continuous refrigeration of food was imperative, special 60-cycle lines were laid to two major power consumers before the cut was made. In the case of one large store, a 250 kw. frequency changer was employed to keep the elevators in operation until such time that they could be changed to 60-cycle supply. Smaller frequency changers were employed to supply power to machinery which had not been standardized under the normal procedure.

Actual main cuts, lasting approximately two hours in each case, were planned for five successive Wednesdays. During this time the contractor made any interior changes to equipment which was necessary, while London P.U.C. and F.S.D. officials organized the change of feeder lines to supply the new 60-cycle supply.

A Co-Ordinated Operation

The fact that there were no lockouts recorded during this major changeover program helped considerably towards making it a co-ordinated operation. This was facilitated through a series of registered letters from the area F.S.D. office to the consumers involved. The response in having someone on the premises not only reduced the possible fire hazard but helped the Frequency Standardization Division complete the changeover with a minimum of inconvenience to all concerned—the keynote of this whole program.

FORTY LEAGUES ONWARD

(Continued from page 9)

as well as in every other field of power supply, is the gathered momentum of forty years of growth and experience. Far-flung districts now being reached by the advancing spearheads of Hydro power enjoy the advantage of this increased momentum in the initial activities undertaken there. Often new developments take off from scratch with surprising speed. This was obviously the case in the Dryden district. There are many farms in this area of considerable size. One of those which we visited comprised no less than 1,200 acres. Consequently, with the farms situated quite a distance apart, 90 new services supplied within a period of six months—to use a rather over-worked colloquialism—was certainly "going some."

And it was not only around Dryden that rural activity was being stepped up. A Hydro rural construction camp has been established at Kenora for approximately two years, and a Hydro R.O.A. office was established on February 6 of this year. At the end of August, Area Inspector H. A. Burleigh was able to report that 65 miles of new rural line had been constructed and that altogether 79 new rural miles would be in operation within another month. Altogether, 326 customers would be served through this construction. These rural Hydro services in the Kenora area have been made possible through the co-operation of the Ontario and Minnesota Power Company, whose generating station at Tunnel Island on the east branch of the Winnipeg River is supplying the power.

Photo-news



DURING A VISIT to Canada and United States this fall, Sir Walter Fleming, a distinguished scientist and a notable figure in the British electrical industry was a recent guest of the Commission. During his visit, the eminent research administrator toured Hydro's Laboratory in Toronto and the new Des Joachims Generating Station. In company with W. P. Dobson, Director of Research, and William Hogg, Resident Engineer (left), Sir Walter is shown in the control room at Des Joachims with G. B. Tebo, Electrical Research Engineer; R. B. Young, Asst. Director of Research; H. C. Ross, Structural Research Eng., and W. B. Buchanan, Research Advisor.



IMPLEMENTING HYDRO'S [illegible] to increase the [illegible] of the R. L. Hearn (Toronto) and the J. Clark Keith (Windsor) Generating Stations [illegible] 160,000 kilowatts, Chairman Robert H. Saunders and General Manager and Chief Engineer Richard L. Hearn paid a flying visit to Britain, where they received assurances from two British companies that the necessary equipment would be delivered and installed in time for service in October, 1952. The photograph was taken at the workshops of C. A. Parsons and Company, Newcastle-on-Tyne, which is manufacturing the equipment for the station in Toronto. Left to right are Mr. Hearn; Sir Claude D. Gibb, Managing Director of the Parsons firm; Chairman Saunders and Hamilton Holmes, who is associated with the firm of Merz & McLellan and who is an engineer for Ontario Hydro in matters of design. Behind them is the rotor [illegible] of one of the turbine-generator units to be installed in the Hearn Generating Station.



Central Ontario Meter Association

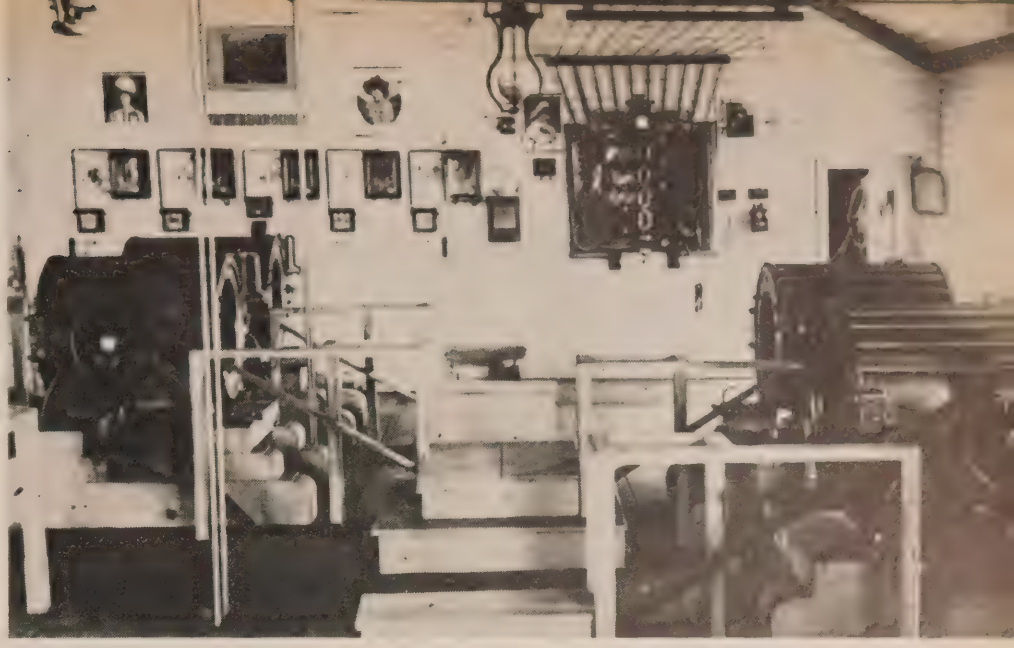
HELD this year in the King Edward Hotel, Toronto, the fall meeting of the Central Ontario Meter Association established a new record for attendance. Morning activities, presided over by President J. R. Risebrough, included the election of executive officers and the presentation of a paper "Induction Type Watthour Meters" given by J. Gordon Steiss, Kitchener P.U.C. Adjourning for lunch, at which they were guests of Toronto Hydro, the association members heard addresses given by Bert Merson, Vice-Chairman, and E. M. Ashworth, Chief Engineer and General Manager. The afternoon session included the presentation of a paper "Instrument Transformers" by D. T. Shaw, Ferranti Electric Co., and also featured a questionnaire on the Toronto Hydro Low Voltage Network, with answers given by Harry Hyde, Underground Superintendent. The top picture shows a general view of the luncheon. The centre photo features the Association's Board of Experts which operated during the question period. Left to right—T. J. Honan, New Toronto P.U.C.; Leo Cain, Toronto; F. J. Smith, H.E.P.C.; R. T. James, Toronto. The bottom photograph shows the newly-elected officers. Back Row, left to right, 2nd Vice-President G. Van Bridger, Bowmanville P.U.C.; Secretary-Treasurer N. Redsell, Etobicoke Hydro; Past President J. R. Risebrough, Oshawa P.U.C.; Al Christie, North York Hydro. Front row, left to right, First Vice-President Don Foreman, Mimico P.U.C.; President S. B. Upper, and M. H. Brown, H.E.P.C.





Photo-news

RIGHT: Turning back the clock over half a century, this photograph shows the interior of the first power house in Peterborough. The old type generators shown in the foreground, are a far cry from the gleaming present-day models. The old Peterborough power house was situated beside Hazlitt dam at the foot of London Street. At that time all the dams on the river were built of wood and streets were lighted by carbon arc lamps.



BELOW: Conference Committee for the 1951 Summer General Meeting of the American Institute of Electrical Engineers is shown preparing plans for this important meeting. This will be held at the Royal York Hotel, Toronto, June 25 to 29, 1951. Committee Chairman O. W. Titus estimates that about 800 will be registered for this meeting. Left to right, seated—J. T. Fisher, Bell Telephone Company of Canada, Secretary; W. R. Harmer, Ontario Hydro, Vice-Chairman; O, W. Titus, Canada Wire & Cable Co., Chairman; A. H. Frampton, English Electric Co. of Canada Ltd., Vice-President District 10; D. F. Martin, Packard Electric Co. Ltd.; J. H. Smith, Canadian General Electric Company. Standing—M. C. Thurling, Canadian General Electric Co., Treasurer; G. A. Brace, Ferranti Electric Ltd.; M. J. McHenry, Ontario Hydro; J. T. Thwaites, Canadian Westinghouse Co.; J. Y. Doran, Toronto Transportation Commission (representing at the time of the picture, Committee Member J. G. Inglis); Marino Fraresso, Ontario Hydro; D. G. Geiger, Bell Telephone Co. of Canada (member at large); E. M. Haacke, Electrical News and Engineering and P. J. Croft, Canada Wire & Cable Co. W. J. Gilson, a member at large, was absent when this photo was taken.





NIGHTFALL ON THE MONTREAL RIVER

HYDRO News




Seasons
Greetings

HYDRO News

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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Christmas 1950



Robert H. Saunders



Geo. H. Challies



W. Ross Strong



A. R. Young

Once again we have come to the time of the year when men of goodwill pause briefly to remember the enduring message of Christmas. And we of the great Hydro family—on the Commission staff and with the various Hydro municipalities throughout Ontario—unite with all Canadians and free people everywhere in observing this happy season. We can look back with justifiable pride upon the tremendous accomplishments of the past year. We remember, too, the many problems we have been called upon to face and how these problems have been overcome by the untiring efforts and initiative of our engineers, construction men, linemen, operators and administrative personnel. At this critical hour in the lives of men and in the history of nations, we are deeply conscious of the high responsibility resting upon each one as we rededicate ourselves to the accomplishment of still greater tasks in meeting the challenge of the year ahead. To all these people of Hydro, wherever they may be serving, go the sincere wishes of the Commission and Management that Christmas may bring them and their families the greatest happiness and that the New Year may open up a new vista of hope, peace and prosperity for all peoples in all lands.

Day of Days

CHRISTMAS is here again, and the bells and carillons ring out their message to men of good will. For a while the cares and anxieties of life, which are so often the reflexions of self-interest, will be banished from the mind, and, according to our condition or temperament, in quiet observance or in rollicking merriment, we shall celebrate this joyful festival.

In Canada these are prosperous times. Most of us who are able to work are profitably employed, and never, perhaps, has such concern been shown for the aged, the destitute and the ailing. There are, it would seem, few Scrooges among us this year, and if it were not for the situation in the world about us, this Yuletide, for most Canadians, would indeed be a season of unprecedented rejoicing. We are called upon, however, to remember that there are many countries overseas in which, if we were living there today and exercising to the fullest extent only the good qualities with which Providence has endowed us, nevertheless we should be suffering want, frustration and even physical distress instead of enjoying the buoyant happiness attending individual and co-operative achievement in this peaceful and fortunate land.

Such thoughts as these should temper the attitude of any of us, who in the exuberance of prosperity, might be inclined to overlook the real significance of Christmas and to over-emphasize the traditional festivities. We should light the candles and pile on the Yule logs of cheer and merriment and good-will, but let us avoid the smoke and flame of too high and incongruous a fire.

We should, of course, enjoy ourselves at Christmas, and wherever possible in our homes, because this Day of days is essentially a festival for children and for a re-awakening of childhood faith and confidence in all of us. And who is there who does not experience the purest joy, free from any alloy of self-thinking, as he helps the children unpack the parcels piled about the Christmas tree, or participates in their innocent games or frolics, or tugs with John and Mary at the tinselled cracker as the turkey is served around the festive board?

And the spirit of faith and confidence engendered by Christmas should pursue us in our activities after Christmas has passed. It should encourage us in our daily tasks, for the work committed to the hands of every one of us is of importance in the building-up of this wonderful country of ours and in its contribution to the making of a better and more peaceful world.

Here in Hydro, we are all co-operating, at the desk or in the field, in vast projects designed to bring incalculable material benefits to the people of Ontario and, in the trade and industry they stimulate, to countless thousands outside the province as well. Let us, by zeal at our tasks and by friendliness and helpfulness in all our contacts, continue to put something of the Christmas message into the further efforts we shall be called upon to make.

Hydro News wishes all its readers a Merry Christmas and a Happy New Year.



Aqueous blasts from bazooka-shaped monitors have removed more than 13,000,000 cubic yards of silt. Monitor delivers 1,500 gallons of water per minute.

BURIED TREASURE

Dewatered Lake at Famed Steep Rock Iron Mine Has Yielded Over Million Tons of Ore This Year

by
Harry M. Blake
Hydro News

WE stood on ground which a few years before had been covered by the waters of a lake, looking down into the open pit of the Steep Rock Iron Mine.

Below us mammoth electric shovels were sinking their hungry maws into the broken-down ore. Powerful diesel-driven "Euclids," shouldering their loads with Atlantean ease, were passing to and fro in rapid but orderly procession. Men in high rubber boots, coveralls and protective helmets were engaged in various tasks on the shifting over-floor of viscous, terracotta-colored mud, which was continually whipped about by the movements of the trucks and other vehicles. From the farther end of the pit came the rattle of churn-drills, preparing for new blasting operations. Here and there, from behind the periphery of rugged slopes, clouds of water-vapor rose and hung like the smoke of explosions as the rocks were swept clear of silt by aqueous blasts from bazooka-shaped monitors.

"This is our Errington mine," Dr. H. S. Hicks, the company's geologist told us. "It is named after the late Joseph Errington, who was one of the pioneers of Steep Rock. We designate it also by the letter B. Development is now starting on two other properties, A and C, the first of which has been named after our late president, General D. M. Hogarth, who, as you will remember, passed away last June."

He paused for a moment as if in salute to the memory of this Canadian-born descendant of Scottish Highlanders, who had represented his home consituency of Port Arthur in the Provincial Legislature for 21 years and who had devoted most of his life to the development of the north country.

"We are going down there," our guide presently announced. "Our machines working in the pit use a total Hydro load of approximately 8,500 horsepower. You'll want to see them close-up. It will be a bit sticky, but it's solid underneath. Usually, we don't permit strang

ERRINGTON OPEN PIT at Steep Rock Iron Mine near Atikokan, Ont., Excavation of the ore body has already been carried to a depth of 200 feet. Bottom of pit is actually 350 feet below surface of the dewatered lake whose original level is indicated by the trees on the left.





LOOKING WEST from the hanging wall of the south pit at the Errington mine. Stripping operations are in progress. In the middle distance, close to the bank, a 15-inch section dredge is operating. An electric shovel, foreground, is loading truck while churn drills prepare for blasting.



MARMION-RAFT LAKE cut was blasted out of solid rock. In the foreground—part of a drive of 6,000,000 board feet of sawlogs.

unfamiliar with working conditions to wander about in the pit. But you Hydro men are accustomed to this type of job. Keep clear of the slopes where there is loose ore and rock and you won't get into any trouble."

Down In The Pit

He drove us back over a company-built road as smooth as the Queen Elizabeth highway to the entrance at the other end of the pit. Here we picked up rubber boots and proceeded on our way afoot.

"Those Euclid trucks passing us have a loading capacity of 22 tons," Dr. Hicks informed us as we walked along. "We have 30 of them on the job. That 9-inch churn-drill over there is one of a battery of eight employed down here in the pit. Of course, all the men are cleared out of the pit and from the surrounding area as well before blasts are set off."

We came to where a giant tractor was hauling an electric shovel into a new position, and we learned that seven of these tractors, which are of the largest and most powerful type procurable, are in service at Steep Rock.

Dr. Hicks waved his hand to a distant group of men operating an hydraulic dredge close in to the terraced bank.

"That's 15-inch equipment," he explained. "We have two of those dredges. We also employ fourteen 24-inch water pumps. You'll be interested to know that they used the first Hydro power brought in by your line from Port Arthur for the dewatering of Steep Rock Lake. They still use Hydro power, but they are now employed in hydraulic stripping operations."

We were now getting well into the brownish surface slush and beginning to slip and slide. It was like learning to skate. We noticed, however, that it was comparatively dry in the immediate

wake of the enormously broad 24-ply treads of the Euclids. (The tires, by the way, cost $1,400 apiece). By following closely after one of these trucks, we reached the spot where the gigantic shovel, which he had observed from the top of the pit, was working. Under the powerful but easily-controlled impulses of Hydro power, it began to load the Euclid we had been following — four cubic yards of ore at a bite. There were three of these super-shovels on the job and four others, with a capacity of two and-a-half cubic yards. When the Euclid had loaded up, there was another to take its place. And this went on with scarcely any interruption during the three eight-hour shifts, the blasting operations being carried out at times when they would disturb the working schedules as little as possible.

Continuing Work Underground

The open pit in the Errington zone at the time of our visit was 200 feet deep. Actually, it was 350 feet below the water level of the displaced lake.

Operations above ground, we were told by M. S. Fotheringham, Steep Rock's President and General-Manager, to whose kindly invitation we owed our visit, would continue until about 1954. As the pit was like a funnel whose boundaries had to be continually enlarged to provide an adequate safety slope, it would not be economical, he pointed out, to carry it further down than the depth expected to be reached by that date. Thereafter the ore, which was believed to extend to a very great depth, would be mined entirely from underground workings.



GOING UNDERGROUND to tap the ore body below the levels regarded as practical for open pit mining. This surface adit will provide access from the change-house and shaft-collar.

A start had already been made on two tunnels leading to the ore bodies. The shafts, we were told, would descend ot a depth of 1,250 feet. There would be three cross-cuts, 200 feet apart. They would be located at the 800-foot, the 1,000-foot and the 1,200-foot levels. Electrically-driven conveyor belts, 4,000 feet long, operating at right angles to the shafts, would convey the ore to the hoisting locations. Mr. Fotheringham expected that the first underground ore would be taken out in 1952. When in full stride, with work on a two-shift basis, it was expected that production in this new mine could be maintained at a rate of 1,500,000 tons a year. This will be even greater than the record for the open pit, which up to date is rather more than 1,200,000 tons.

New Ore Zone Discovered

The Errington property, as previously explained to us, is only one of the properties being developed by the Steep Rock Iron Mines Limited. The company is now uncovering the Hogarth Zone and is looking forward to an output from this source of another 2,000,000 tons of high-grade iron ore per annum. And beyond this, Mr. Fotheringham told

DIESEL-POWERED EUCLIDS with a loaded capacity of 22 tons convey the ore from the open pit to the crushers. Thirty of these heavy duty trucks are employed in the operations at the Steep Rock Mine. Roads are kept in good shape—tires cost $1,400 apiece!



ERECTING STIFF-LEGS for the 15-ton derrick which will handle the motor-pump and auxiliary equipment for the mammoth dredge to be used in uncovering the iron ore in the Hogarth zone.

us, there are further prospects. Within the last year the Company discovered what appears to be continuous ore in the middle area between the Errington and Hogarth zones which are approximately a mile and a half apart.

"It would appear," said Steep Rock's President, "that this middle area contains an ore deposit at least as large as the Hogarth zone, which is estimated to be three times as large as the Errington. I don't think I am too confident in stating that by 1955 we should be mining 3,000,000 tons of iron ore a year and that by 1960 our production should be about double that amount."

As to the C ore zone, which is located about the same distance to the east of the Hogarth as the Errington is to the south, Mr. Fotheringham stated that this had been leased by Steep Rock to the Inland Steel Company of Chicago and that preliminary exploration had been attended by favorable results. There was prospect, he said, of this zone producing ultimately 3,000,000 tons a year.

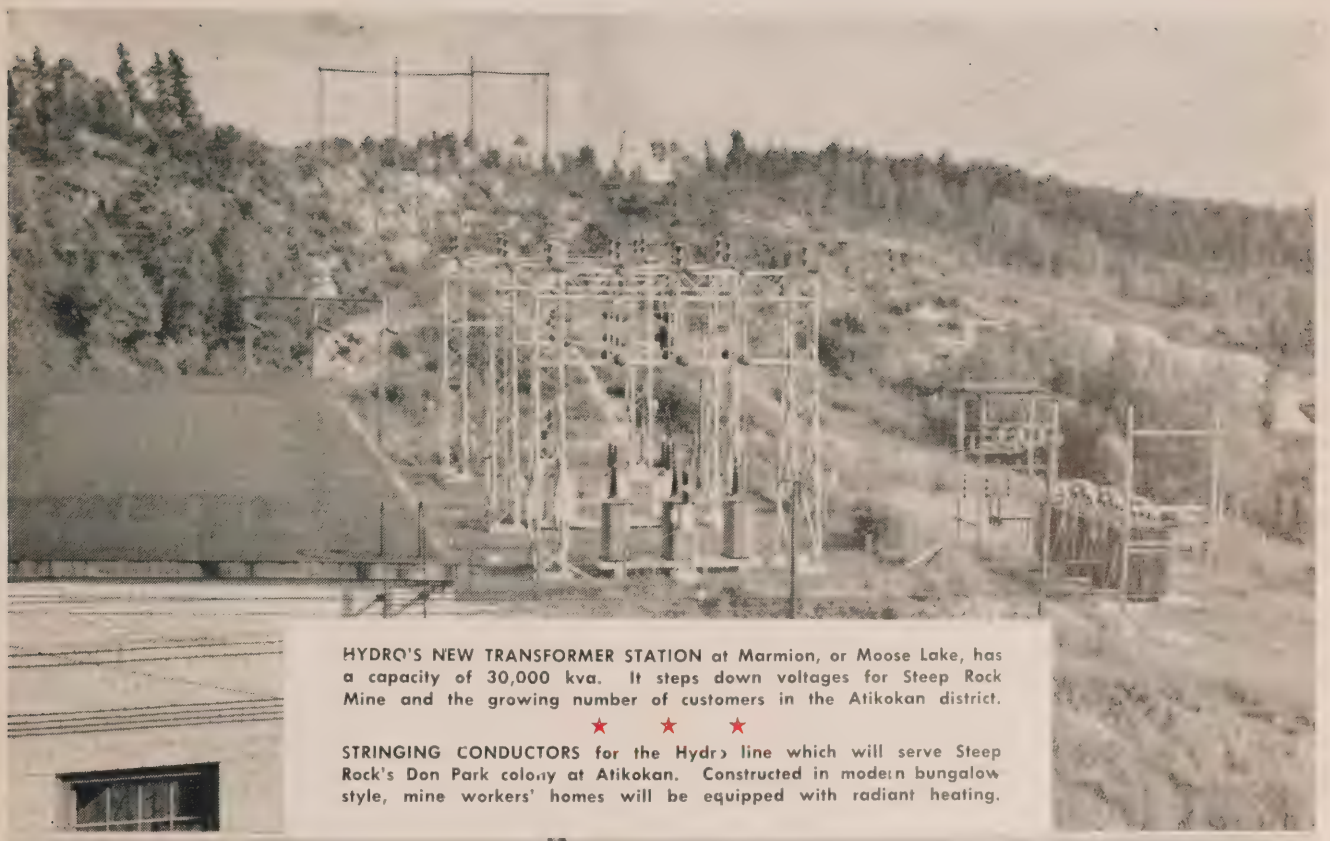
Production Prospects

We had been working with pencil and paper.

"All this adds up," we said, "to a total ultimate annual production of



ONE OF the biggest dredges in the world, the "Nebraska," operating entirely under Hydro power, is now employed at Steep Rock on the gigantic task of removing 50,000,000 cubic yards of silt overlying ore.



HYDRO'S NEW TRANSFORMER STATION at Marmion, or Moose Lake, has a capacity of 30,000 kva. It steps down voltages for Steep Rock Mine and the growing number of customers in the Atikokan district.

★ ★ ★

STRINGING CONDUCTORS for the Hydro line which will serve Steep Rock's Don Park colony at Atikokan. Constructed in modern bungalow style, mine workers' homes will be equipped with radiant heating.





THERE ARE no dragons in the pit at Steep Rock, but sometimes greenstone "monsters" rush down the slopes after blasting.



THIS POWERFUL ELECTRIC SHOVEL, with four cubic yards of "bite," is stripping waste rock from a hanging wall to uncover the iron ore.

9,000,000 tons of ore from the Steep Rock region alone."

"I hadn't quite finished," Mr. Fotheringham smiled. "Apart from A, B and C zones, there are at least four other areas which are considered likely to contain ore deposits. It is believed that, when all the country round-about is explored, a total potential resource of hundreds of millions of tons will be shown. Coupled with the tremendous reserves of lower grade but attractive ore in the Michipicoten area, that would suggest that Ontario is destined to become one of the greatest iron ore producing regions in the world."

"What does that mean in values?" we asked.

"Well, speaking for ourselves, we expect to deliver this year a total of over 1,200,000 tons at lower lake ports. We shall receive about $10,500,000 for it. Of course most of the money we make during the next few years will go into further developments, bringing employment to a large number of firms and individuals. We think that is important, and, of course, a good deal of development must be carried out at such an undertaking as ours before production gets into full stride. We are also doing a tremendous amount of construction and improvements around Steep Rock to make this place a pleasant place for the workers. We hope it will be second to none when we have finished. At the moment we employ about 600 men. Some 300 are quartered here at the mine and the others at Atikokan. We are constructing 135 new homes for our men and their families at Atikokan. Most of the houses are of bungalow construction. And we are installing radiant heating in all of them."

Progress at Atikokan

We had already visited Atikokan. We had found it a thriving, bustling place, with new construction going on in every quarter. Since the opening of the Steep Rock mine in 1943, its population has jumped from 300 to 2,500 people. If its future growth is to be measured by present activities, the claim of its progressive and energetic Chamber of Commerce that it would reach the 5,000 mark by 1953 appears to be quite justified. And the prospect somehow seemed to be given further assurance of realization by the commodious departmental store which that solid and reliable old institution, the Hudson's Bay Company, was erecting on the main street.

Diversion — Then Dewatering

From the beginning of active mining development in the Atikokan district, Hydro power has been playing an essential and increasingly important role.

The iron ore deposits at Steep Rock were found to be located under water so that tremendous pumping operations, preceded by large-scale diversions had to be carried out to uncover them.

Steep Rock Lake is roughly M-shaped, with a surface area of approximately seven square miles and a depth varying from 140 feet to 350 feet. The Seine River, coming down from Moose or Marmion Lake, situated just to the northeast, originally entered the right-hand corner of the M and discharged through the lower left-hand corner. In order to get to the ore in the east and middle bays of Steep Rock Lake, it was necessary, first of all, to divert the course of the river. As the Seine was a continuous waterway widening into Moose Lake in its course, this was accomplished by tackling it at the north end of Moose Lake and directing its flow through a new control dam into an adjacent basin known as Finlayson Lake. The river now flows on down from Finlayson Lake through the west bay of Steep Rock Lake, discharging as before.

The diversion required the re-directing of a major waterway to a route four miles northwest of its original location and embodied a diversity of construction jobs within an area of 100 square miles. The level of Finlayson Lake, 33 feet higher than Moose Lake, had to be lowered and the flow reversed. This was achieved by driving a tunnel 1,400 feet long under the terminal moraine and breaking it through into the lake bottom. The project involved the removal of over a million cubic yards of rock and gravel and was completed in ten months.

Meanwhile Ontario Hydro had con-

structed a power line to Steep Rock from Port Arthur — completed in 212 days at a cost of approximately $1,500,000 — and was prepared to supply the load of 7,000 horsepower required for the dewatering operations. These involved altogether the removal of approximately 100,000,000,000 Imperial gallons. Fourteen pumps, each powered by a 500 horsepower motor, and with a combined capacity in excess of 300,000 gallons a minute, were assembled for the task.

As the Errington or B. orebody outcropped at a much higher elevation than the others, it had been decided to develop it first. The silt, still overlaying the iron deposits when the water had been cleared off, was in places over a hundred feet deep. This overburden was disintegrated with high pressure water jets and the slurry pumped by means of hydraulic suction dredges to disposal points in the middle arm. The hydraulic stripping operations, to which reference was made by Dr. Hicks, were commenced in June, 1944, and have been carried out continuously since that time. Up to the present a total of nearly 13,000,000 cubic yards of silt have been removed by this method.

The A or Hogarth orebody, where dredging operations were begun last October, is roughly three-quarters of a mile long and averages 340 feet in width. We were told that ore is known to exist to a depth of 900 feet and is expected to go to multiples of that depth. The zone is overlaid with 50,000,000 cubic yards of silt. If this could be converted into concrete, it would be sufficient to build a roadway, six inches deep and twenty feet wide, completely encircling the globe at the equator. The contract for this project has been let to the Construction Aggregates Corporation of Chicago and at the time of our visit crews were busy assembling the dredging equipment, which will be operated entirely by Hydro power.

Hydro News is indebted to A. E. Randall, Project Manager of the Construction Aggregates Corporation, for details of the impressive equipment which is now at work.

The mammoth dredge employed, one of the largest in the world, is known as the "Nebraska" and was built for a monster dam construction job in the United States. Afterwards, it was employed at the Boston airport. It was dismantled there for shipment to Steep Rock and a train of about 85 cars was required for the transportation of the parts from the eastern seaboard.

The dredge structure, itself, is 133 feet long, with a width of 40 feet. A ladder extends 55 feet beyond the stern posts. The hull is 10 feet deep. The dredge is equipped with a 6,000 horsepower main motor and booster installations of an additional 7,000 horsepower. Its maximum monthly dredging capacity is approximately 2,000,000 cubic yards. Hydro power is delivered through a flexible cable, 3,000 feet in length, from a conveniently-situated substation.

Working with this modern electrically driven equipment, the tremendous task of removing the overburden will be greatly expedited and the job is expected to be completed in about three years. Mining of the ore will then begin along similar lines to those followed in the Errington zone.

Power From Nipigon Plants

It is important to note that the power used for this project, as well as for all others in the locality, originates from Hydro's generating stations 200

(Continued on page 30)

DURING THE 1950 SEASON, production of high-grade iron ore at Steep Rock totalled 1,216,614 tons valued at approximately $10,500,000. After being crushed and screened to a size of 8 inches, the ore is shipped by rail to Port Arthur and thence by freighters to lower lake ports.



This and That

by The Editor

FRANKLY, we just couldn't believe it. It all happened one Christmas Eve. Two or three inches of snow carpeted the streets and a light snow was falling. We were walking along Melinda Street in Toronto, just near where the old Globe building used to stand. We stopped in our tracks. There, on an office window, we saw the name quite clearly: "Scrooge and Marley, Accountants." At first, we suspected someone had put "something" in our ginger ale! "What the Dickens," we thought and then chuckled at our own pun! But, this was no time for chuckling. Something was wrong. Otherwise, how could we come face to face with the names of two men who were conceived in the mind of Charles Dickens in the year 1843 when he wrote "A Christmas Carol?" And right here—in Toronto—and on Christmas Eve!

"Would you like to come in?"

We jumped so suddenly that we lost balance and sat right down on the snow and found ourself looking up into the beaming, rotund face of none other than old Fezziwig, himself, attired in familiar knee britches, fancy waistcoat and flowing tails. This was just about all we could take. We slowly rose to our feet.

"You ARE Mr. Fezziwig?" we asked.

"Yo, ho, none other young man," he laughed. "Would you like to come in?"

"Well, y-e-es," we faltered, "b-u-u-t. . ."

"Just put your hand in mine. Nobody will see us."

Somehow, we just had to obey and so in we went. We rubbed our eyes in amazement at what we saw. A deep, red carpet covered the floor of a small, well-appointed room. Two banks of fluorescent lights stretched across the room, providing brilliant illumination which was further accentuated by the rays from a big desk lamp. Seated at a large, glistening mahogany desk was none other than—you guessed it—old Scrooge, himself—attired in the familiar dark knee britches and tail coat. There were the same features—pointed nose and shrivelled cheeks. Yes, and through an open doorway leading to another room we could see Bob Cratchit, sitting at a table busily operating a comptometer—and he, too, in knee britches and coat buttoned up to the neck.

At that moment the phone on Scrooge's desk started to ring. We could hear the voice at the other end of the line.

"Is that Mr. Scrooge or Mr. Marley?"

"My partner, Marley, passed away last Christmas Eve," snapped Scrooge. What do you want?"

"Sir, this is The Star calling. Mr. Marley was always a liberal contributor to our Santa Claus fund. We have no doubt his liberality is well represented by his surviving partner. As you know, Mr. Scrooge, this fund helps make Christmas brighter for many families through the boxes we send. We . . . "

"Sir," interrupted Scrooge. "Have we no welfare services?"

"Yes, but . . ."

"And," demanded Scrooge, "aren't the Red Feather Services functioning?"

"Yes, but . . ."

"Good," returned Scrooge. "I was afraid for a moment they had ceased to function. I subscribe $12 a year to Red Feather and I pay my taxes."

"Splendid, Mr. Scrooge. However, at this time of the year most people think of their less fortunate fellow men and try to express the spirit of Christmas. What can we put you down for, sir?"



"Nothing," snapped Scrooge.

"You wish to be anonymous?"

"I wish to be left alone."

With that parting shot, Scrooge slammed down the receiver.

At that moment another Dickensian character strode into the office. He was tall, ruddy and handsome.

"Merry Christmas, Uncle," he exclaimed.

"Nuts," snorted Scrooge. "What right have you to be merry. You're poor enough. You are trying to meet the payments on a house, keep a wife and three children and drive a 1932 car—all on $37.85 a week."

"Well what right have you to be dismal, Uncle, with all your International Gasoline and Canadian Corporation stock not to speak of a million dollars in real estate? You're rich enough."

"Humbug. Keep your Christmas in your own way. I'll keep it in mine."

"But you don't keep it, Uncle."

"Let me leave it alone, then. Good afternoon."

"Sorry, you feel that way, Uncle, we wanted you to come over for turkey dinner. I won a bird in the bowling alleys the other night. But a Merry Christmas just the same and a Merry Christmas to you, Bob."

"Same to you, sir," waved Bob Crachit.

"Bah," muttered Scrooge. "And that clerk of mine! Bah!"

Just then, the sound of carol singing and the Salvation Army Band could be heard outside.

Scrooge slammed his fountain pen down on the desk, rushed to the window and proceeded to berate the singers about annoying people who were trying to work.

A few minutes later the City Hall clock commenced tolling the hour of 5 o'clock. Scrooge grunted and glanced through at Bob Cratchit who was timidly putting away his work sheets.

"Not so fast, Cratchit, we'll finish these statements. You'll have the whole day off tomorrow, won't you?"

"Yes, sir. It's Christmas."

"Bah, fine excuse. I pay you $32.50 a week and a $5 bonus at Christmas. You get a day off every year at this

time. Get busy and finish that job before you go."

"Yes, sir."

At that moment the telephone rang. Scrooge, muttering to himself, picked up the receiver.

Again we heard the voice at the other end—this time, a familiar, yes a very familiar voice. We listened.

"Mr. Scrooge?"

"Yes, what do you want?"

"This is the Hydro Chairman. I am advised the lights are still on in your office and it's after 5 o'clock."

"Of course they're on and they'll stay on. Under the terms of my lease I am supplied not only with a furnished office, heat and telephone but all the light I want to use. It costs me $50 a month.'

"Mr. Scrooge, I wrote you a personal letter asking your co-operation in saving power. You will render a public service by switching off your lights."

"Mr. Saunders, I am too busy a man to be interested in the public, Good night."

Scrooge slammed down the receiver and almost immediately something happened. The lights went out. And nobody in sight had been near the switch! Cursing under his breath, Scrooge groped his way toward the switch and then stopped dead in his tracks. There, looking at him from the switch was a face. The face of the Hydro Chairman!

Just then, Fezziwig pulled our sleeve and beckoned us to come over to a corner of the office. In the uncertain light we could see three figures. We gulped. They were the ghosts of Christmas Past, Christmas Present and Christmas Yet To Come.

"Listen," said Fezziwig.

The Ghost of Christmas Past was speaking. "Yes, my lads," he was saying, "tonight, we'll give the old boy the works."

The Ghost of Christmas Yet To Come seemed to be pondering.

"Sure, let's do it," said the Ghost of Christmas Present. "Mr. Saunders has approved. What do you say? O.K.?"

The other two nodded assent.

At that moment, Scrooge had plucked up courage to turn on the switch. As he did so, the lights hissed, flared up and went out alternately. As we stood watching that amazing pyrotechnic display hundreds of scenes flashed before our eyes. First Scrooge was being hurried across the countryside by one ghost and then the other. Then, suddenly the lights came on, brilliantly illuminating the office again. There was Scrooge slumped over his desk asleep. He seemed to awaken with a start. Then he started to dance. "I'm as light as a feather and as happy as a lark," he exclaimed. He looked at his watch. "Six o'clock. Bob Cratchit has gone. I must have fallen asleep." He looked at the light switch closely and thoughtfully. Then he went to the phone and dialed.

"Is that The Star?"

"Yes, sir. That must be Mr. Scrooge."

An amazing fellow; a most intelligent fellow, thought Scrooge.

"Yes, this is Mr. Scrooge. Put me down for $5,000 as a contribution to the Star Santa Claus Fund and say, could you use any help delivering parcels?"

"YES, SIR."

Transported and upheld by the strange power of Fezziwig we saw Scrooge go to work that night and The Star had no happier or more willing worker.

Then we found ourself back in Scrooge's office at 8.45 p.m. the day following Christmas. There was Scrooge chuckling to himself and waiting for Bob Cratchit.

Half an hour late, Bob came timidly tiptoeing into the office. Scrooge grunted.

"Young man, this has gone far enough."

"I'm sorry, sir."

"You're sorry, well I'm not. Merry Christmas, Bob, and from today I'm tripling your salary."

"Sir." Bob looked as if he might faint any minute.

"Yes, Bob, on one condition."

"Ye-e-s, sir."

"Go to the store and get us a couple of 60-watt bulbs for our desk lamps and

(Continued on page 27)



OSHAWA

by
Grace J. Carter
News Editor



Headquarters of Oshawa Public Utilities Commission.

"Motor City" Served by Hydro Since 1915—Ranks High Among Canadian Industrial Cities

SITUATED at the foot of a high range of hills, Oshawa, popularly known as the "Motor City," extends to the blue waters of Lake Ontario, just 35 miles east of Toronto.

Essentially an industrial centre, which has been served by Hydro since 1915 it ranks seventh among Canadian cities from the standpoint of manufacturing production. Today its thriving industries are noted not only for the diversity of their products, but for their modern and efficient plants.

Records show that Oshawa's history dates back to 1795 when Lieutenant-Governor Simcoe built a military highway known as the Kingston Road as far as the site of the City of Kingston about 160 miles distant. In 1835 the hamlet was known as Skea's Corners and it was not until a post office was established in 1842 that the name was changed to Oshawa, an Indian term meaning where "the canoe gives place to the trail." It was incorporated as a town in 1879 and as a city in 1924.

From a small hamlet ranging along the creek, grist and flour mills, a tannery, woollen mill and saw mill sprang up. Later there came foundries, forges, woodworking establishments and others.

It was during the middle 70's that a carriage maker, the late Robert McLaughlin, started a cutter and buggy business at nearby Enniskillen. This business steadily expanded and eventually was moved to Oshawa, where in 1907 the first automobile was built. And so the carriage company which attained the reputation for building "only the finest," became known as The General Motors of Canada Limited, and its products are now as well known as were the early buggies. This Company now has a staff of approximately 9,000 and during the first six months of 1950 has turned out about 78,000 units, of which approximately 20,000 were trucks. During the Second World War they were engaged almost exclusively on war production.

A few of the other major companies located in this enterprising city include Fittings Limited; Adanac Machine Shop; Anglo-Canadian Drug Company; Beaton Dairy Products; Jeffery Foundry; Cole of California (Canada) Limited; Duplate (Canada) Limited; Fiberglas (Canada) Limited; Kool-Vent Aluminum Awnings of Ontario; Ontario Steel Products Limited; Ontario Malleable Iron Company; Robson Leather Company and Schofield Woollen Company.

In the 1880's, when electric lights first made their appearance in Oshawa, power was supplied by a local plant of about 200 horsepower. This plant was added to by Messrs. Edmondson and Murton and finally taken over by the Seymour Power Company in 1911.

The source of supply was the Trent Valley, and Oshawa, for the first time, had 24-hour service. This private company sold out to the Provincial Government in 1915, and the Oshawa System became a part of the Central Ontario System of The Hydro-Electric Power Commission of Ontario. The municipality remained under the direct jurisdiction of the Hydro until in 1930, the Oshawa Public Utilities Commission (electric and water) was formed. The commission at that time comprised Commissioners John Stacey, G. D. Conant, W. H. Ross, Mayor T. B. Mitchell and Chairman F. L. Mason.

In 1930 the load was about 9,500 horsepower, and at the present time it is close to 34,000 horsepower. In Oshawa, there are 8,067 domestic, 902 commercial and 157 industrial customers who are served over a network of 64.68 miles of distribution lines and by four substations. In addition, the Oshawa Rural Operating

Area comprising 5,629 customers is operated by the local system.

During the past 20 years there has been a steady reduction in the cost of service to customers. In 1930, with an average domestic monthly consumption of 84 kilowatt-hours, the average cost was 2.6 cents per kilowatt-hour. At the present time, the average monthly consumption of domestic users is 299 kilowatt-hours and the average net cost per kilowatt-hour is 1.15 cents.

Another indication of the growth and stability of this flourishing centre of some 29,770 persons is to be found in the many fine homes (largely occupied by owners), churches, buildings, schools, parks, a hospital and a public library. A plan to annex a large area adjacent to the city, now under consideration, would add another 8,500 to the population.

Unique Feature

It might be mentioned that a rather unique feature which has undoubtedly played an important part in the furtherance of Oshawa's industrial expansion is the inter-switching facilities of the Oshawa Railway which runs through the centre of the city and connects with every large factory.

Another important factor is the harbor which is used by boats drawing up to 14 feet of water. These ships bring in coal and other freight for the factories. It is expected that this harbor will be extended and, evenually, will rank as one of the country's most important inland ports.

From early settlement days, Ontario County has been a noted livestock centre and many breeders in the Oshawa district have won recognition throughout the North American continent as importers of the finest quality livestock. The fertile farming district, comprising most of the 2,500-mile area of Ontario County, is also noted for its grain and root crops, milk and dairy products, beef and poultry, apples and other fruits. In this connection the Oshawa Fall Fair sets a high agricultural standard throughout the County.

Celebrates Centenary

Oshawa, which by the way is celebrating its 100th anniversary, is proud of the fact that the Ontario Regiment (11th Armoured Regiment) has its headquarters there. Its history dates back to the last century and, as its name implies, is the Regiment for the County of Ontario. During the First and Second World Wars many residents of the County, as well as residents of the Province of Ontario and other parts of Canada, served with this regiment.

The city's newspaper is the *Daily Times Gazette* published by A. R. Allow[illegible] McIntyre Hood is the Managing [illegible]

The present Oshawa Public [illegible] Commission is ably administ[illegible] Chairman S. J. Babe, who has [illegible] continuously since 1934; William [illegible], who has served since 1937; R. G. M[illegible] H. F. Baldwin; Mayor Michael Starr [illegible] Manager George F. Shreve, who has been with the Commission since its in[illegible] in 1930.

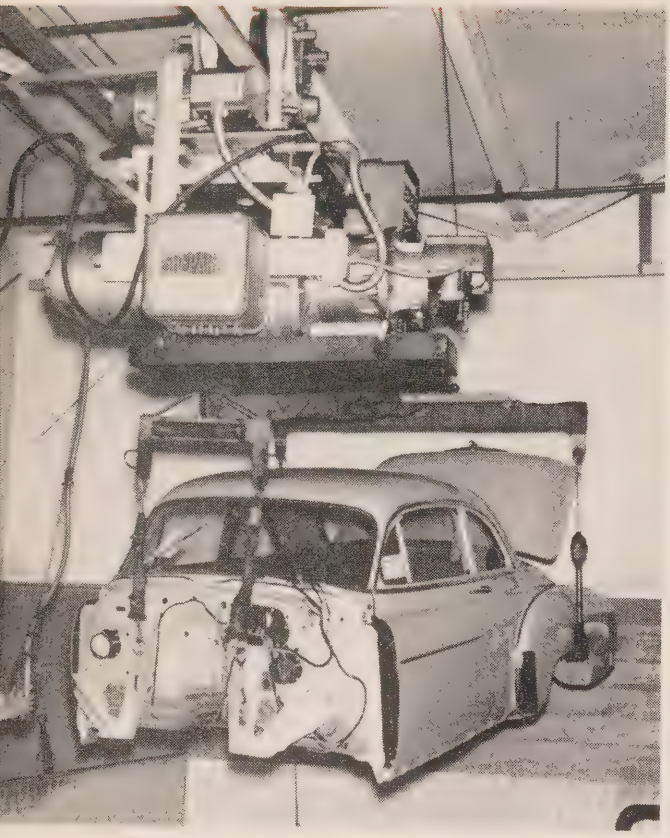


GEORGE F. SHREVE, Manager of the Oshawa P.U.C., looks over proposed annexation plan. This would add another 8,500 to population

THIS BEAUTIFUL ITALIAN GARDEN is to be found at "Parkwood", Oshawa residence of R. S. McLaughlin, whose father founded the carriage business which was the forerunner of General Motors of Canada, Limited. Garden parties are frequently held in this attractive setting



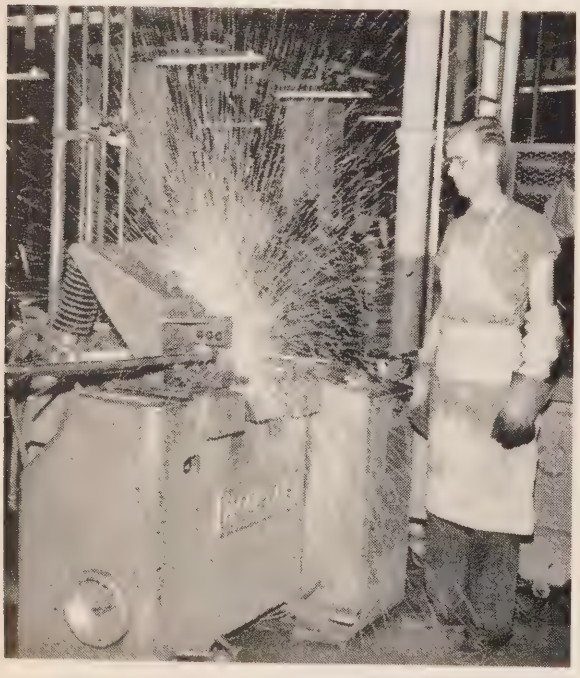
OSHAWA—Continued

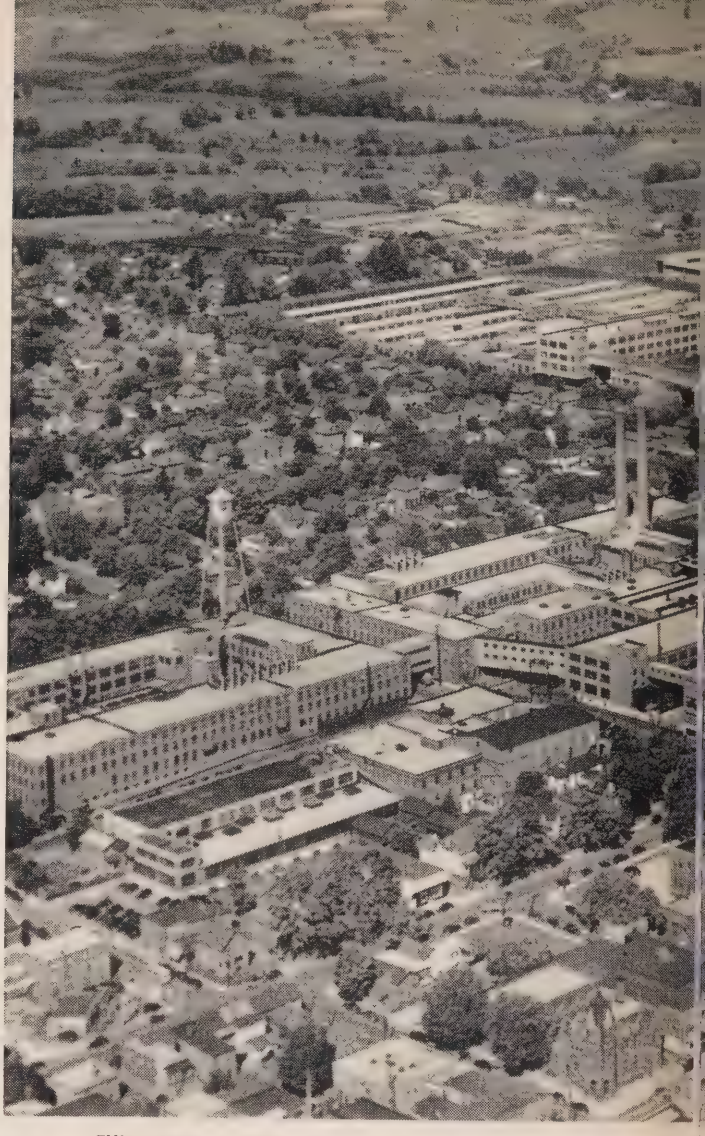


COMPLETED CAR BODY is ready for the "drop" on to the waiting chassis below. Record cards for identification purposes are attached to the body, giving required color and equipment.

★ ★ ★

AN ELECTRIC MACHINE shown welding two pieces of an automobile grill together. When the completed car comes off the assembly line it goes directly to the high-banked test track of General Motors for any minor adjustments.

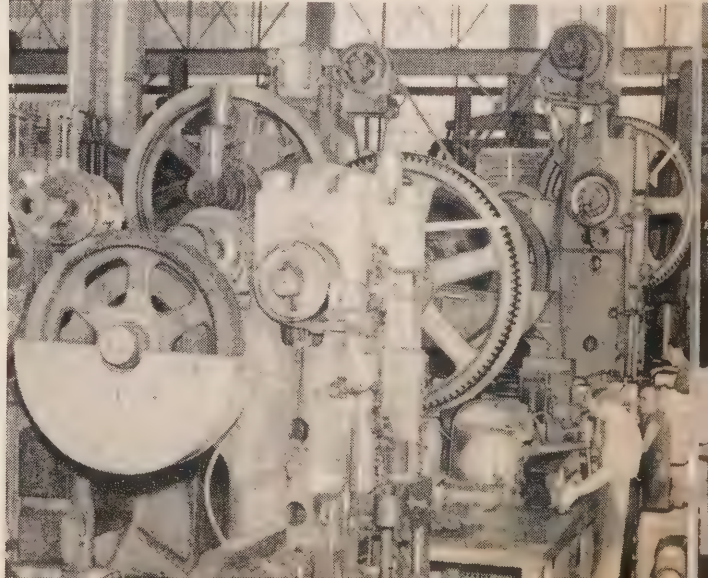




THIS AERIAL VIEW of Oshawa shows the large plant of the Gen a floor space of 2,700,000 sq. ft., the company now employs s

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THIS PRESS in the stamping plant of General Motors is operated by an individual motor with a rating of approximately 100 H.P.





rof Canada, in the foreground. With a total area of 60 acres and Ceople, of whom about 900 have had 25 or more years' service.

★



FOR MANY YEARS it has been a common sight to see electric trains crossing the main thoroughfares in Oshawa. This photograph shows an electric switching engine in the Motor City.

★ ★ ★

A. R. ALLOWAY, (left) President and Publisher of the *Daily Times-Gazette*, talks with Managing Editor N. McIntyre Hood Paper is also circulated in Whitby, as well as in adjacent points.



OSHAWA'S NEW SECONDARY SCHOOL, opened last September, has every modern facility to make it one of the finest and most efficient of its kind in the province. This municipality also has a large collegiate and vocational institute and nine well-staffed elementary schools.







OSHAWA — Continued

TOP: GROUP of Oshawa linemen and part of the fleet of 18 trucks. Included are Jack McKay, Earl Landon, Rufus Lambert, Albert McConkey and Cecil Burr, all foremen.

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CENTRE: IN THE local commission's spacious and well-filled stock room, Herbert Knight, stock-keeper, and his assistant, Lloyd Pegg, make sure that supplies are well ahead of demand.

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BELOW: This is the Oshawa billing office where the accounts for more than 16,000 urban, as well as rural, Hydro and water customers of all classes are prepared by P.U.C. staff.



Yuletide Thoughts

Weary feet, and string, and paper;
Tinsel, toffee, lights that waver
Teddy bears and babes in mangers;
Words of greeting among the strangers.

YES, it's Christmas time again. A hundred things to remember: a hundred things to do. Exhausting, it's true, and yet exhilarating. Costly of course, but well-rewarded.

Let's see now. Better get some more candies, just in case. Remembered Uncle Tom this year? Don't forget molasses for the plum pudding—there's nothing like it. And if that young tyke Jimmy hasn't learned to stop poking out his tongue at the guests there's going to be trouble.

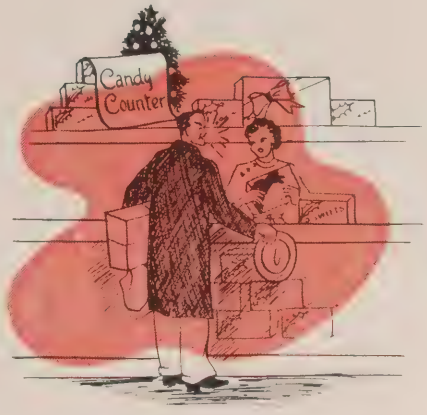
And so it goes. Hasty decisions, detailed planning, more and yet more shopping, plenty of cooking. So little time, yet there's enough to spend a little thought on one's relations, forgotten during the last twelve months,



Such as Auntie Flo and cousin Pat,
And other kin we tend to drat.
For oft we'll find that on a call
They aren't such odd types after all.

Christmas is the time when another batch of Ebenezer Scrooges meet their Jacob Marley ghosts, and relent tight-fisted grasping to catch the spirit of goodwill and joy.

It's the time when each shopper, a dozen things to buy, clusters round store counters, peering, rejecting, selecting. And it's the time when, despite the Christmas spirit, tempers tend to become a trifle frayed. Harassed salesgirls are so often discouraged when they serve the "counter wit" to say,



"These candies are the gift for her,
"Shall I wrap them for you, Sir?"
To which the wit, complete with leer,
Replies, "No thanks, I'll eat them here."

Then we have our young carol singers—those melodious groups whose delightful persistency does much to remind us of our Yuletide duties. Carols were first made popular by St. Francis of Assisi in the 13th century, when they were sung at his religious meetings in a stable complete with manger, live animals and myrrh.

Since then—with various degrees of success—Christian youngsters, their tiny larynxes stretched to the limit, have unconsciously done sterling service to change the situation. And well muffled—but not muffled—their trilling voices continue to cut sincerely through the sharp night air.

High-pitched, resonant, bell-like notes,
Swelling from our youngsters' throats,
Sound carols that are sweet to hear—
Providing it's but once a year!

As the 25th approaches, festive preparations reach fever pitch. A dread prevails that something has been missed. Everything is checked — and double-checked — until at last the day arrives.

All is set. Gaily-ribboned gifts are stacked against the tinsel-covered tree, inviting, captivating, cryptic. And eager children, whose active fingers have already pried into stockings filled by Santa Claus, gather round for the treat of the year.

by
Shaun B. McQuillan
Hydro News

But where's Grandpa? Can't open a thing till he comes down. Ah! . . . . At last . . . . Get set! . . . . Ready! . . . Now! . . . . .

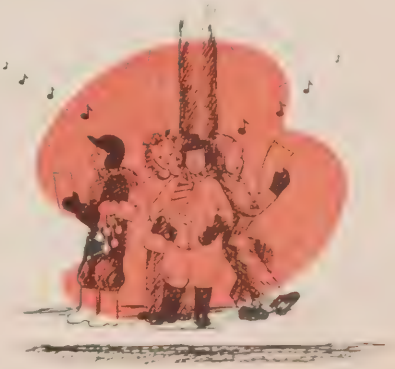
Wrapping, string and stuffing flying,
Chaos, joy, contented sighing,
Delighted squeals and giggles of glee
Are centred on the Christmas tree.

The Christmas tree becomes a symbol—the symbol of that inheritance which had its beginnings in Bethlehem nearly two thousand years ago. It is mirrored in every gift, each decoration from mistletoe sprigs to the star atop the Christmas tree, the turkey, the plum pudding and colored candles. It permeates the air like a fragrant scent, noticeable yet unobtrusive, faint but strong. It cannot be erased even under the classic tragedy of the season. It usually comes when the elders are opening their gifts.

Dick and Clem were charmed—they said.
But they were flushed a bright rose red.
Was it? . . . Could it be? . . . Yes!
No! . . . Oh, Cripes!
They'd given each other identical pipes.

It's just one jolly thing after another. Young Joe can be relied on to spill maple syrup down Aunt Aggie's best party dress. Little Jenny, bless her golden curls, will count the only pack of playing cards—with goo-covered fingers. The vegetarian member of the family group will decide to eat nothing but ground nuts and water. Alfie will skin his knee trying out those new skates.

But one and all will again blend their voices in that old, familiar, and ringing greeting: "Merry Christmas and A Happy New Year".





VARIOUS TYPES OF BUILDINGS designed by Consulting Engineering Division are shown in this aerial view of

Unique Record Of Accomplishment

Consulting Engineering Division Responsible for Design And Construction Supervision of Wide Variety of Projects

DESIGN and supervision of construction of a wide variety of projects, ranging from the Commission's 200-acre Islington Service Centre to temporary and portable structures are among the noteworthy achievements of Ontario Hydro's Consulting Engineering Division.

This division is also credited with the successful adaptation of wartime Bailey Bridge materials for various phases of construction at many of Hydro's projects.

Originally organized as the New Buildings Section early in 1947, when E. P. Muntz was appointed Consultant to the Commission, this branch of Hydro has assumed steadily-increasing responsibilities. In little over three years it has attained the stature of a division, embracing five sections with a permanent staff of 127, in addition to 80 hourly-rated employees, serving both the Engineering and Administrative branches of the Commission.

Reflecting the unique role which this division has played and is playing in relation to the Commission's tremendous and highly-accelerated expansion program, Mr. Muntz and his staff over that period have been responsible for construction valued at more than $20 million. The fact that approximately $7 million of that sum represents structures on power projects built of Bailey Bridge materials is in itself an indication of the many important ways in which Hydro is using this equipment described by Field Marshall Montgomery as the most important contribution to the last war. In addition, Bailey has made possible the economical and rapid construction of many large storage and shop buildings at the Islington Service Centre and elsewhere, worth approximately $1,500,000.

by
Dennis A. Dack
Hydro News

Put To Many Uses

When Englishman Donald Bailey in 1937 introduced the portable steel structure which was to bear his name through World War II, and for which he was subsequently knighted, he could not possibly have perceived the many uses to which it would be put by Ontario Hydro in the postwar years. This has included the erection of large office and storage buildings, conveyor and gantry bridges, and concrete form cages. Of these, the latter has been an important and perhaps the most unorthodox use.

Credit is due to Hydro's General Manager and Chief Engineer, Richard L. Hearn for the peace-time employment of this portable-type construction equipment. At his direction, the Commission made an



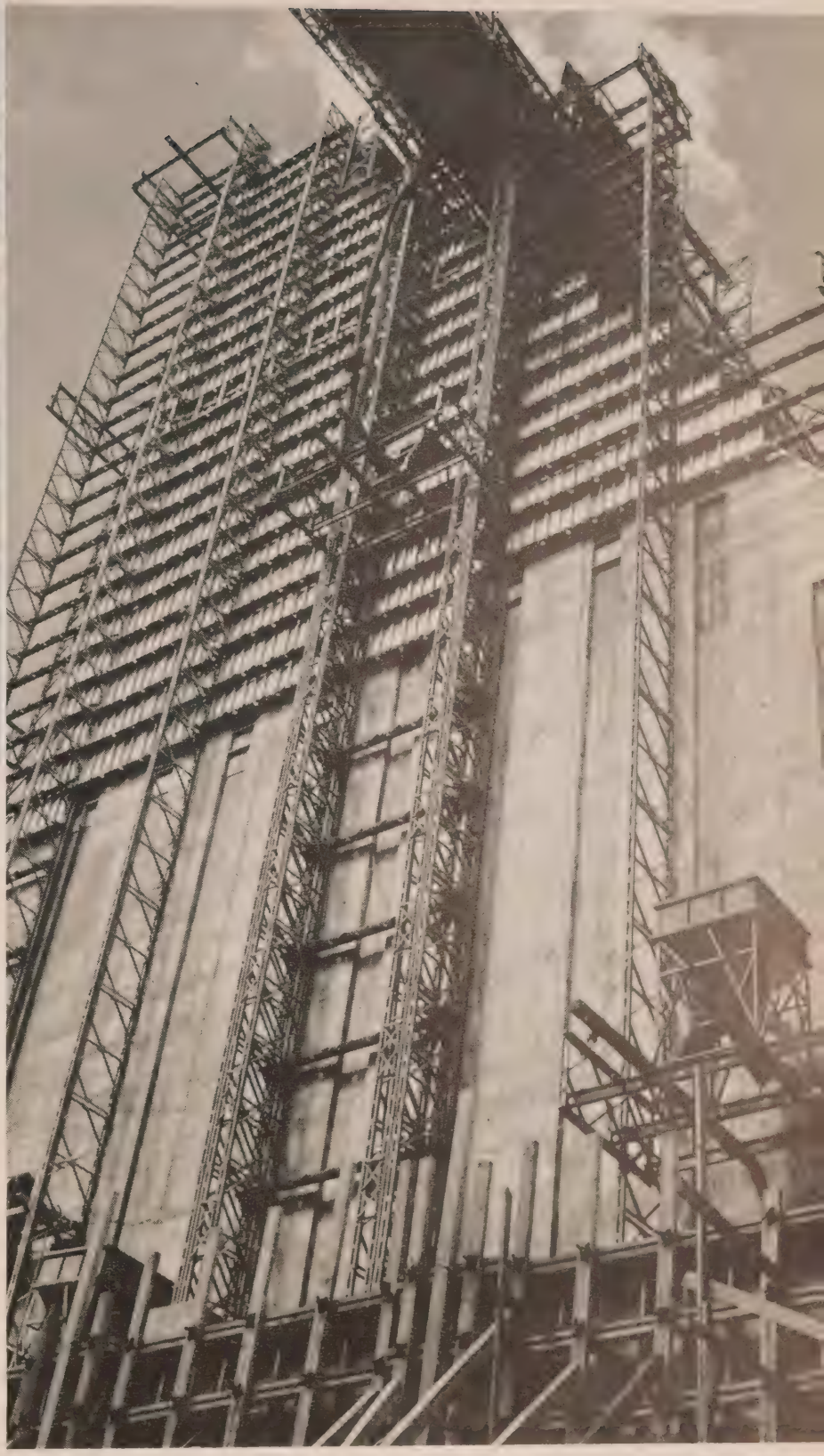
Islington service Centre.

initial purchase of 800 tons of Bailey bridging. Today, 18,000 tons, (27,000 panels) is in the hands of the Commission —sufficient to build 23 miles of single span bridges.

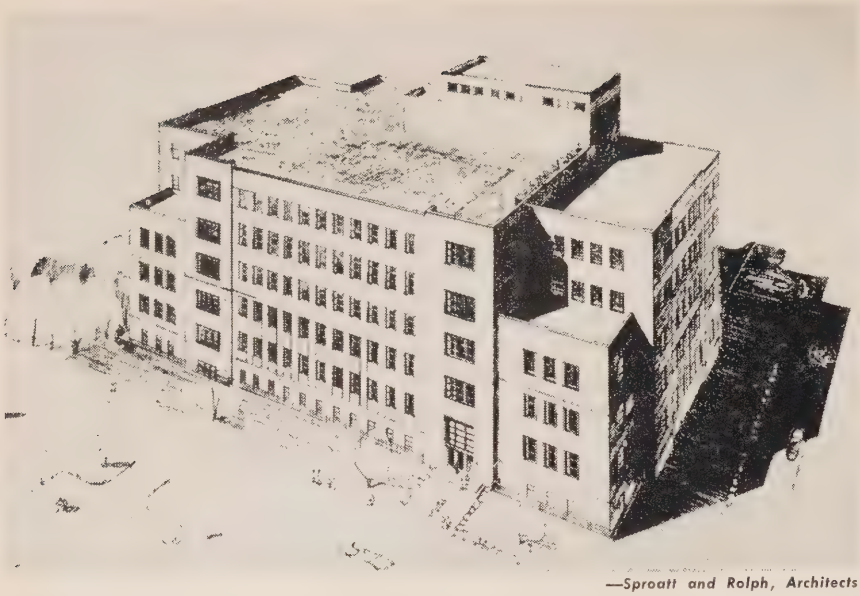
At the recently-completed George W. Rayner Generating Station the main dam formwork was almost entirely Bailey structure, involving 1,400 tons of bridging equipment. The over-all result has been described as a very orderly job with a considerable saving in time, labor and actual cost. Large continuous pours were possible in winter weather in rapid succession with a minimum of construction labor necessary on the formwork.

This material, first adapted for use at Des Joachims, was also used at Pine Portage. Basic units of the Bailey equipment were used, i.e., pin-connected 600-pound steel panels or frames, 10 feet long by 5 feet high. The vertical bulkheads and the sloping up and down stream faces of the dam monoliths were formed by placing plywood panels against what would normally be a Bailey bridge standing on end. These bridges were held in place by tie-rods, thus leaving almost completely free a working space for the placing of concrete inside the forms.

Notable, too, among the achievements of the Consulting Engineering Division has been the designing and supervision of many temporary and demountable



TOWERING BAILEY Bridge formwork, used extensively in construction at George W. Rayner Generating Station, makes an impressive picture as it stretches to height of 190 feet. This bulkhead included a triple-truss bay to support the concrete conveyor system. Plywood panels in top section of the main dam are shown in position for placing of concrete.



—Sproatt and Rolph, Architects

ARCHITECT'S DRAWING of the Commission's new Engineering Building which will adjoin the existing Service Building west of Hydro's Head Office. Construction of this six-storey office, which will accommodate several engineering departments, will begin early in 1951.

buildings. First of the temporary structures was the familiar emergency service premises, often called the "Bailey Building", erected in 1947 to provide approximately 20,000 square feet of office space at the rear of Hydro's head office.

Three types of demountable buildings other than Bailey have also been designed by the Division for use as offices and small warehouses. While these are being used at present for main and sub bases in connection with the Frequency Standardization program, they are primarily designed to provide accommodation for rural and regional offices. It is interesting to note that they can be easily erected by any line gang.

Three Basic Types

Consisting of three basic types known as "A", "C", and "D", demountable buildings are designed for short and long term use with approximately 90 percent of the materials recoverable for re-con struction.

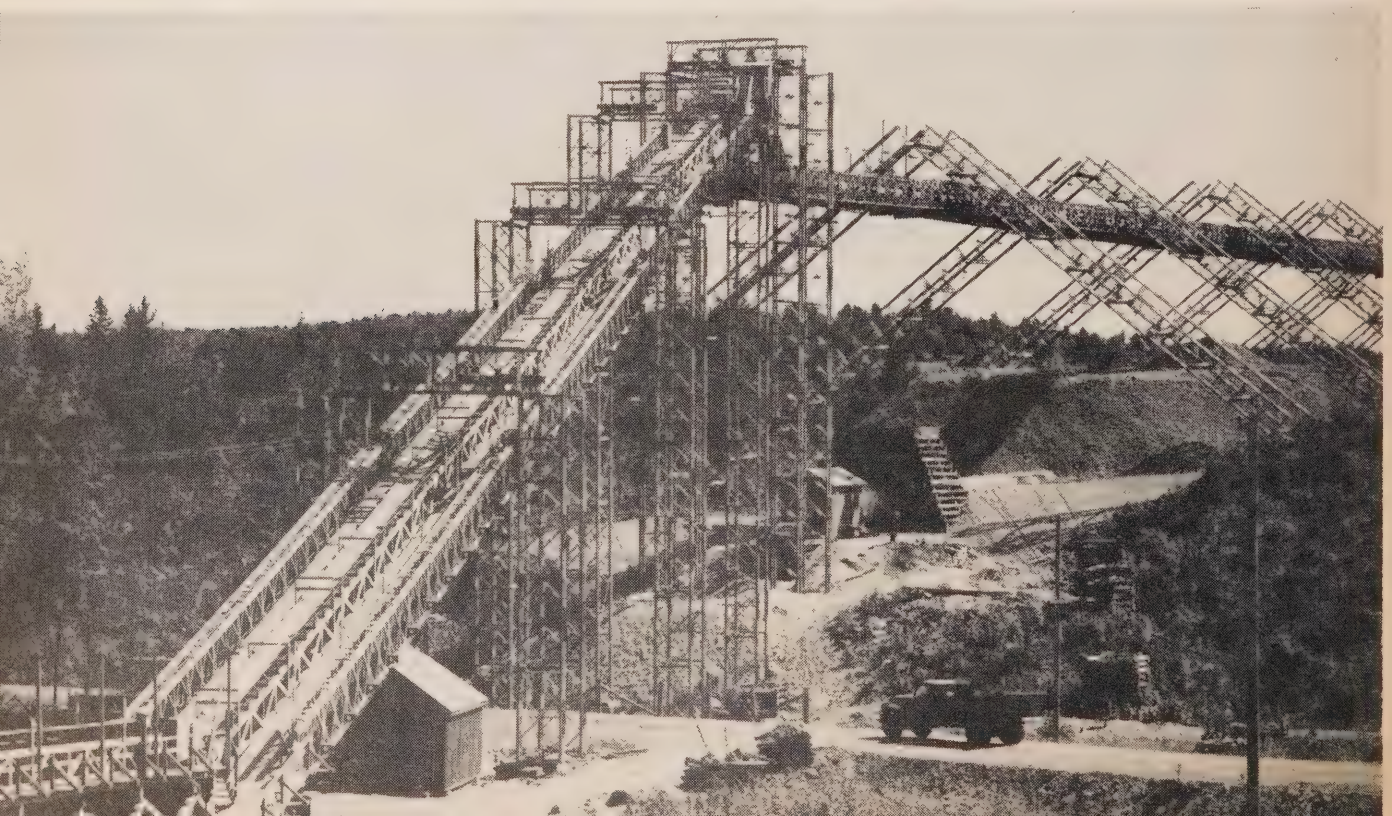
Type "C" is about to be placed in production. The basic module is a 20-foot square frame which can be multiplied to an unlimited sized building of either one or two storeys. Three type "A" buildings are in use at the Richard L. Hearn Generating Station. Although confined at present to a 48-foot width, this type is ideally suited to yielding foundation conditions. Type "D" has been developed to meet varying requirements in width and length. Basically 30 feet wide and any number of 12-foot bays in length, it is capable of taking 12-foot additions on either side of the building. The division has been instrumental in the final design of the outer siding for this form of structure, employing special aluminum sheeting or an asbestos insulboard sandwich which provides its own insulation. The Commission owns 15 such buildings at present, several of which are in use at the Islington Service Centre and the main F.S.D. base at Windsor.

Another example of the progressive enterprise exemplified by the Consulting Engineering Division is to be found in experiments with pre-stressed concrete. Offering innumerable advantages and economies in future construction, pre-stressing has been restricted mainly to European bridges, buildings, poles and towers. Now, following a great deal of research, the Commission may have the distinction of being a pioneer in installing the first pre-stressed concrete structural floor above ground on the North American continent. This will be on the second storey of a type "C" building.

Pre-Stressed Material

Hydro News learned that experiments on pre-stressed material have centred around the use of the steel core of aluminum conductors for high tension wires.

USED TO BRING AGGREGATE from screening house to stock piles, right, this conveyor bridge at Des Joachims is another example of the uses of Bailey Bridge equipment evolved by Hydro's Consulting Engineering Division. Bailey Bridging was also used extensively for conveying concrete.



By running such high carbon steel wire through the concrete and anchoring it at each end with special clamps, stresses opposite to those to which the concrete will be subjected in service are imposed on it, thus making it possible to use much lighter sections. Obviously the greatest advantages are in economy of material and space. Where a normal floor may require the support of 12-inch steel beams, a pre-stressed concrete of only half that depth can be used without intermediate supports.

In the case of pre-stressed flooring to be used in the Commission's type "C" demountable buildings, a five-inch concrete slab will span something like 20 feet before requiring a support. A saving in height of more than 12 inches is produced by this method over the old system which may require costly 18-inch steel bar joists.

Studies are in progress to extend prestressing to cover other important applications to Commission requirements. Foremost among these will be the replacement of timber poles.



E. P. MUNTZ, right, Consulting Engineer to the Commission and head of the Consulting Engineering Division, discusses plans for a new Hydro building with Professor M. W. Huggins, University of Toronto, who is retained by the division as consultant on structural design.

An Achievement

The Islington Service Centre embraces many forms of construction in use today. Something of an achievement in view of the tremendous expansion in stores and service requirements, it is often referred to as being a "self-contained village" with its camp for 200 people. Involved in building the centre was the installation of 21,000 feet of railway track, together with 40,000 feet of storm and sanitary sewers and 20,000 feet of water mains. Comprising close to 200 acres, Islington S.C. has upward of 1,000,000 square feet covered with storage and office buildings, 130,000 square feet of which is reinforced concrete. A complete underground electrical distribution system, a firehall, cafeterias, etc., have been designed and installed by the division.

The facilities available to Ontario Hydro through the Consulting Engineering Division are far too diversified to be covered adequately in one article. Yet each section is so closely co-ordinated that all play an equally important part in the general make-up of the organization.

Office accommodation to provide for the very large increase in the Commission's staff over the past 4 years has been another responsibility of the Division. Permanent quarters have been provided by the construction of the Orde Street Service Building and 210 Bloor Street. Work on the Engineering Building, Murray Street is about to commence Temporary quarters have been provided at 49 Bathurst Street, 224 Richmond Street, 420 Bathurst Street and in the Emergency Bailey Office Building.

A wealth of experience assembled by its staff has enabled the Division to cope

(Continued on page 27

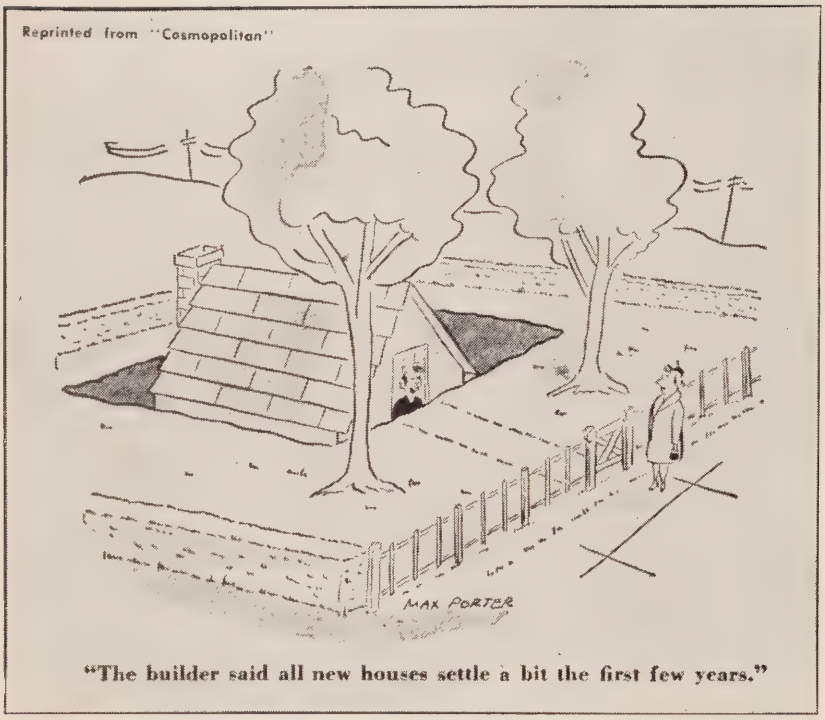
BUILDINGS DESIGNED by C. E. D. at the Islington Service Centre employ a variety of different types of construction. Some have frames of Bailey Bridging such as this tied-arch type which has a span of 153 feet, and will be used by Frequency Standardization as main warehouse



Maybe You'll Laugh Too!



Reprinted from "Cosmopolitan"

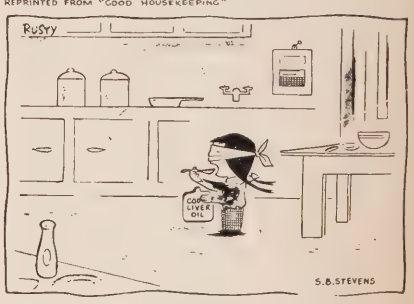


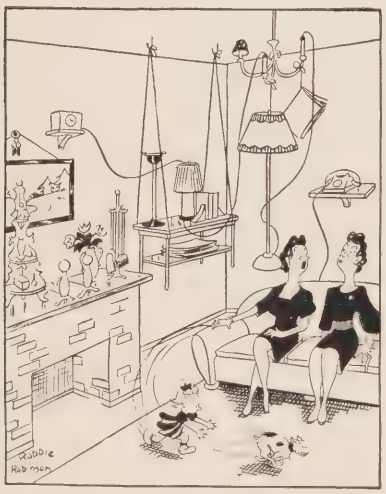
"The builder said all new houses settle a bit the first few years."



"WELL—THE Murphys have started Spring house cleanings."

REPRINTED FROM "GOOD HOUSEKEEPING"





"NECESSITY IS the mother of invention, I always say."

REPRINTED FROM "MOTOR"



"NOW YOU just watch! They'll blame me because I'm a woman driver!"



"GOT ANY Pipe Cleaners?"

WINTER MAKE-UP



"WINTERIZING" HYDRO'S FLORAL CLOCK. Included are; Carl Warner, Niagara Forestry Supt.; Ernest Hedge, Gardener, C. Deffain:. assistant.

by
C. G. W. MacIntosh
Hydro News

Colorful Stone Chips Substituted for Flowers As Hydro's Floral Clock Gets Face-Lifting

IT'S "face-lifting" time for Hydro's giant floral clock.

The big timepiece, situated at the north side of the Commission's Sir Adam Beck Plant No. 1 at Queenston, has undergone a change and is now wearing the "new look" for the late fall and winter seasons. In place of the usual colorful array of flowers and plants, the clock has colored stone chips to mark the hours.

Winter grooming was considered the most practical step to keep the timepiece in service on a year-round basis. Since even the hardiest of plants or flowers could not be used, the plan of substituting stone chips was devised.

And there is a functional reason for keeping the big clock operating all year. It would ensure that the clock's mechanical and electrical parts would be in good working condition for the spring and summer seasons. Besides, word about this remarkable timepiece has spread widely, bringing visitors often from long distances to see the clock, and they would be greatly disappointed if it were not running.

Since being placed in operation last summer, it is estimated that at least a hundred thousand tourists have viewed the Queenston clock. It is one of the most photographed spectacles in the Niagara district, rivalling even the great cataracts, as a major attraction.

Many young honeymoon couples have posed happily in front of Hydro's big clock to have their pictures taken. Visitors of all ages from infants in arms to elderly persons have been "snapped" near the clock. Numerous family photo albums will contain pictures of the Commission's electrical and horticultural display piece.

Although the floral features will be missing for the next five months, the clock with its "new look" is expected to prove an attraction for winter visitors. Contrasting colored stone chips have been selected to form the letters on the clock face denoting the hours. White limestone has been chosen for the letters "Ontario," and pink granite chips for the word "Hydro."

As soon as the first severe frost hit the Niagara district at the end of October, the "face lifting" operation began. The floral plants were removed and about a cubic yard and a half of colored stone chips were placed in the metal containers that formerly enclosed the plants marking the hours. Since these containers protrude from the dial, a third dimensional effect is provided for the stone [illegible] letters.

Stones were considered the most practical markers to use for the winter grooming. At first it was planned to use wooden block letters, but because wood cracks or becomes badly checked under severe weather changes, the colored stone was used.

No difficulty is anticipated in keeping the clock face free of snow during the winter months. Since the dial is on a one-to-three slope, and exposed to the elements on all sides, it is expected that the wind will do its part in keeping the surface clear. The sweep hand moving round the big dial also is likely to play an important role by acting like a propellor in warding off the snow.

Now that the winter "look" has been achieved, planning is in the advanced stages for the grooming of the clock in the early spring and later. In charge of this planning is Carl Warner, Hydro's Niagara Regional Forestry Superintend[illegible]

Already some 1,800 tulip bulbs, 1,900



ATTRACTING MORE THAN 100,000 VISITORS since construction began earlier this year, this general view shows the Hydro clock at the Sir Adam Beck-Niagara Generating Station No. 1 in its winter make-up. A young couple use the timepiece as a setting for a honeymoon photograph.

myosotis (forget-me-nots) and 900 violas have been planted in the face. These will form unique circles on the big dial, giving a mass color effect.

The tulips are all the single, early varieties including Keizerskroon, red and yellow; Rising Sun, yellow; and Brilliant Star, red. The myosotis will be light blue and the violas, white and apricoti. Best showing is expected to be around Victoria Day, May 24th, if it is an average spring.

In the rock garden, at the sides of the dial, there will be more myosotis, violas, various colored tulips and other bulbous plants such as Scilla Siberica (Spring Beauty); Scilla Campanulata (Rose Queen); Alba Chiondoxa (Glory of the Snow); Galanthus (Snowdrops); Muscari (Grape Hyacinth); Hyemalis Eranthus (Winter Aconite) and Rock Garden Daffodils.

Present plans are to retain the spring "look" until the end of May, and then begin preparing for the summer display. Summer planting should be completed by the second or third week in June.

Next summer there will be a total of



FLORAL CLOCK in summer dress before completion of chime tower.

approximately 22,000 plants in the clock s big dial, composed of 15,000 Alternanthera Rosea Nana; 2,000 Alternanthera Aurea Nana; 3.000 Santolina and 2,000 Golden Privet (Ligustrum Ovalifolium).

It is understood that a distinctly Canadian motif will feature that display. Each summer the pattern of plants on the dial will be changed until six or seven main designs are developed. Then, if present plans are carried out, these designs will be alternated to provide a different "look" each main season.

Even the fish pond protecting the front of the dial will have a new appearance next summer. Several varieties of water lilies will be grown in the pond.

There will be various types of hardy water lilies including Sunrise (yellow); Attraction (red); Conqueror (red); Gonnere (white); Splendida (pink); and Gloriosa (red). It is expected that one each of these tropical day-blooming lilies will be used: Blue Triumph (blue); Golden West (pink); August Koch (blue); Mrs. George H. Pring (white), and General Pershing (pink). Two tropical night-blooming lilies, both Missouri (white), and several pink Lotus will comprise the remainder of the colorful array of water flowers in the pond.

The overall appearance of the clock is impressively enhanced by the stone tower at the rear of the dial. This tower houses the clock's chimes and amplifiers.

Erection of this tower marks the end the major construction work on the big timepiece. The main emphasis is now on the "face lifting." And it is a pretty safe bet that with such a variety of "faces" planned for the floral clock, it will be a constant attraction year after year.

THIS AND THAT

(Continued from page 13)

take out these 100-watt bulbs. And, furthermore, the fluorescent lights are not to be used in this office. We'll make this festive season a happy one for everybody, including Mr. Saunders."

Bob hastened out and soon returned. After having placed a 60-watt bulb in Scrooge's desk lamp he snapped on the switch.

At that moment a blinding light seemed to dazzle us and we heard a voice: "Now, dear, don't you think this is carrying conservation too far. I need one light on in this room."

It was our good lady. She had switched on the light at the side of our chair. We looked at the book in our hand. "A Christmas Carol" by Charles Dickens.

It's funny what you dream about when it's near Christmas and you fall asleep while reading "A Christmas Carol."

Well, a Merry Christmas and "God Bless Us, Everyone."

West Central Region Crews Help Restore Preston Service

STATION maintenance and construction staffs, along with engineers and meter and relay experts from Ontario Hydro's West Central Regional Office at Hamilton, worked feverishly with local commission crews to restore service at Preston when power was cut off on November 24. The cut-off occurred during a heavy snow storm when a serious fire broke out at the municipal substation, causing extensive damage.

Preston Fire Department, aided by other firefighters from adjoining municipalities, worked over four hours to extinguish the blaze which destroyed the 26,400-volt buswork along with the complete transformer installation consisting of four transformers.

The Preston Public Utility Commission had one spare 1,500 kva transformer and this was installed in order to make partial service available to local consumers. Meanwhile the Ontario Commission secured other transformers in order to restore complete service.

UNIQUE RECORD

(Continued from page 23)

successfully with the problems encountered in all aspects of construction, including heating, plumbing, ventilation and air conditioning systems, lighting, and power and telephone layouts. Field construction is equally well covered in the shape of excavation, grading, water supply and drainage, roads and track laying.

As head of C.E.D., Mr. Muntz is also Chairman of the Space Committee, charged with recommending the allocation of space in Hydro buildings.

All these facts point up a record of accomplishment which reflects the highest credit upon the skill and initiative of the personnel of the Consulting Engineering Division. Continuing investigation into new methods and materials herald still greater achievements in the future — achievements synonymous with progress, efficiency and economy as Hydro forges ahead to meet the challenge of present day conditions and bring ever-increasing benefits to the people of Ontario.

I don't know if truth is stranger than fiction; it is certainly more disconcerting.

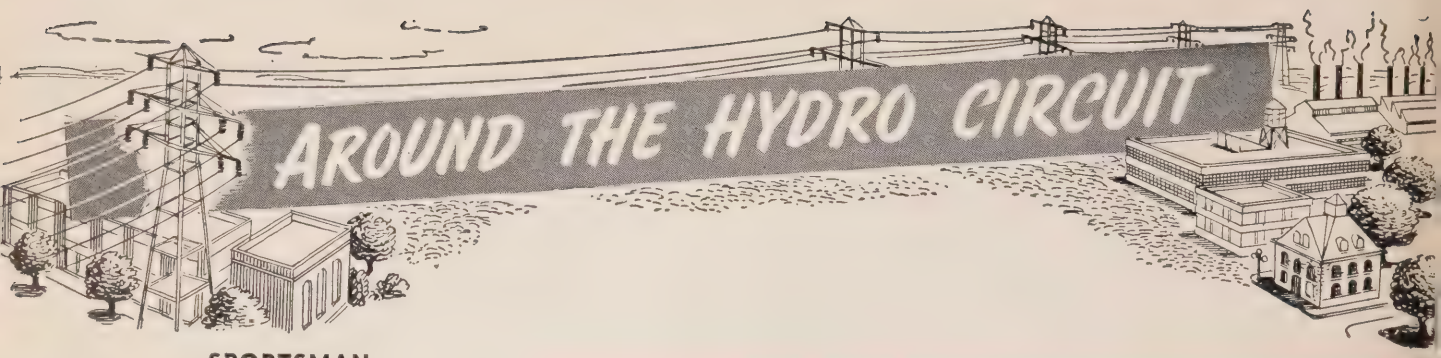
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I happen to have an open mind. I let down a window in my brain about six or seven inches from the top even in the bitterest weather.

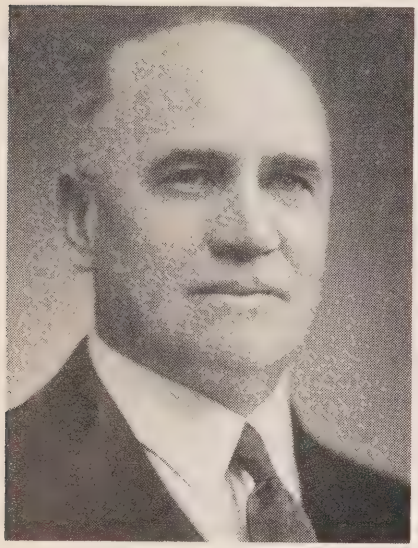
—Heywood Brown.



—Reprinted from Cosmopolitan



SPORTSMAN COMMISSIONER



G. A. MacDONALD

GEORGE Alexander MacDonald is well-versed in municipal affairs, having served on the Peterborough Utilities Commission for the past nine years. He has also served as Alderman; as Mayor from 1926 to 1935; on the Board of Education for one year; and on the Vocational Guidance Committee from 1924 to 1949.

Born in West Zorra, Oxford County, he received his primary education there and later attended the Woodstock Collegiate Institute. He is, at present, plant superintendent at the DeLaval Company, Limited.

Mr. MacDonald is a member of the Masonic Order and the Independent Order of Oddfellows. He takes a keen interest in sports, particularly rugby and baseball, having played on several championship teams. He is married and has one son and one daughter.

An expenditure of $1,200 from available funds of the Port Elgin Hydro-Electric Commission has been approved to cover the cost of purchasing property for the proposed erection of a new office and stores building. The property has a frontage of 90 feet and a depth of 80 feet.

Oshawa's Manager

GENIAL George Frederick Shreve is a well-known figure in Oshawa, having served on the local Utilities Commission since its inception in 1930.

Prior to that, from 1910 to 1914, he served as Accountant with the North Bay Light, Heat and Power Company. From 1915 to 1919 he was overseas serving in the artillery and later as a pilot with the R.A.F. Upon his return in 1919 he served as Accountant with the H.E.P.C. in Oshawa until January 1, 1930, when the Public Utilities Commission was formed. At that time he was appointed Secretary-Treasurer, and in 1932 he was appointed General Manager, which post he has held ever since.

Mr. Shreve proudly points out that his birthplace was down on the farm in Kent County where he attended the "Little Red Schoolhouse" and later the Chatham Collegiate and Chatham Business College.

He is a life member of Lebanon Lodge, AF and AM, and a Past-President of the Oshawa Rotary Club. He is a keen gardener with a particular interest in "glads." He is also an amateur apiarist.

Mr. Shreve is married and has two daughters and three sons, one of whom is at present employed by the Ontario Hydro.

ACCEPTS TENDERS FOR SUBSTATION

Tenders totalling $53,172 were recently accepted by the Port Arthur Public Utilities Commission for construction of a new cottage-type substation and the equipment for the station.

Cost of the new building is estimated at $7,720 while supply and installation of equipment will cost approximately $45,452.

When completed, the 3,000 kva station will serve the Current River area and will be similar to two other stations recently built to serve other sections of the city.

POWER CONSUMPTION HITS NEW PEAK

A new record in power consumption was established at Paris, Ontario, during the month of September according to an announcement made recently by C.A. Veigel, Secretary-Treasurer of the Paris Public Utilities Commission.

Local consumption of power had increased considerably during the last three years, he said. In October, 1948, the load was 683,800 kilowatthours; in October, 1949 it was 816,200 kilowatthours, and during September this year it was 985,340 kilowatthours.

HAS SERVED 14 YEARS ON OSHAWA COMMISSION

WILLIAM Boddy has had considerable experience in municipal affairs, having been on the Oshawa Public Utilities Commission for the past 14 years. He was also a member of the city council from 1929 to 1932, and the local Board of Health from 1930 to 1933.

Born at Taunton, Durham County, he attended schools in East Whitby Township. He is now a foreman in the Robson Leather Company.

Mr. Boddy takes an active interest in fishing and golf and is a member of the Oshawa Golf Club. He acts in an advisory capacity to the Victorian Order of Nurses. He is married and has three daughters.

MAYOR STARR

Michael Starr has served two years as Mayor of Oshawa, and prior to that he was an Alderman from 1944 to 1948.

Born at Copper Cliff, Ontario, on November 14, 1910, he received his education at Oshawa. He is a member of the Rotary Club, and baseball and community recreation are his hobbies.

Mr. Starr is married and has one son and one daughter.

Three New Stations Relieve London Load

THREE new outdoor transformer stations, which will increase London's Hydro capacity by 20 percent, will soon be in operation, according to a statement made by V.A. McKillop, Assistant General Manager of the local public utilities commission. The first of the three, located at St. James and Colborne Streets, he said, was already in operation. The second will be located at Weston Street and Fairview Avenue, and the third at Trafalgar Street and Highbury Avenue. Each has a capacity of 3,000 kilowatts.

The stations are designed to relieve overloading on other substations resulting from the rapid expansion in the city. They are expected to play an important part in the balance of the frequency standardization program.

J. K. MARTIN DIES IN AUTO ACCIDENT

JAMES K. Martin, 57, Trustee and Chairman of Beachville Hydro-Electric Committee for 11 years, was fatally injured recently in an auto accident near Oakville.

Mr. Martin was born at Maplewood in West Zorra Township, and farmed at Braemar for many years. After spending two years in Western Canada, he returned to Braemar where he operated a blacksmith shop for some time before moving to Beachville. Here he continued in the blacksmith business for 17 years.

The deceased took an active interest in community affairs and in Masonic circles, having been a Past Master of the Thistle Lodge, No. 250, Embro. He later affiliated with King Hiram Lodge, Ingersoll, and was a Past Principal of Oxford Chapter, R.A.M., Woodstock, and served a term as District Superintendent of Wilson District R.A.M. He was also a Shriner, belonging to Mocha Temple, London, and also a member of the Wo-Mo Shrine Club, Woodstock. He is survived by his widow, two sons, one sister and a brother.

COMMISSIONER R. G. MILLS

Commissioner Robert George Mills is now serving his sixth term on the Oshawa Public Utilities Commission.

Born at Brigden, he received his education at Sault Ste. Marie, and is now Superintendent of the Body Division of General Motors of Canada Limited.

Fishing and hunting are his hobbies. He is also member of the Canadian Legion, the Oshawa Fish and Game Club and the Wedgewood Fishing Club. Mr. Mills is married and has one son and one daughter.

RESIGNS

J. E. Teckoe, Jr., General Manager, Galt Public Utilities Commission, has announced his resignation to accept the post of Assistant General Manager of Windsor Utilities Commission. Mr. Teckoe, a Past President of the A.M.E.U., has been in charge of the Galt utilities since 1944. He served for five years as Superintendent of Tillsonburg Public Utilities Commission from 1923 to 1930. His father, J. E. Teckoe is a former Manager of the Niagara Falls Commission. Mr. Teckoe expects to assume his new duties on February 1, 1951.



J. E. TECKOE, JR.

EXTEND, REHABILITATE MIDLAND P.U.C. SYSTEM

Midland Public Utilities Commission will expend $27,300 from available funds to cover the cost of extending and rehabilitating the local distribution system. Included in this expenditure will be the cost of constructing, rebuilding and also dismantling portions of 44-kv distribution line. Also included is the installation of totalizing metering equipment to measure the load of the local commission's five substations.

ORLEANS TO GET STREET LIGHTING

Streets will soon be lighted in the Village of Orleans, in the Township of Gloucester. Commission approval has been given to the proposal of the village to install a street-lighting system consisting of 24 units of 100-watts each, with accompanying distribution facilities.

H. F. BALDWIN, STAMP COLLECTOR

Henry Frederick Baldwin is starting his fourth year as Commissioner of the Oshawa Public Utilities Commission.

Born and educated at Lindsay, he is now Superintendent, Parts Warehouse of the General Motors of Canada, Limited with which he has been associated for more than 25 years.

Mr. Baldwin is a baseball and lacrosse enthusiast and Past-President of the Oshawa Curling Club. He says he is looking forward to the day when he will graduate from a stamp collector to a philatelist. He is married and has one son who has worked with the Hydro Commission for the past two summers during construction at George W. Rayner and Pine Portage Generating Stations.

J. B. KITCHEN DIES

AN electrical engineer with the Toronto Hydro-Electric System for over 40 years, James Bert Kitchen died recently at his home in Toronto.

Born in Puslinch Township, he graduated from Pratt Institute, Brooklyn. Prior to joining the Toronto Hydro in 1909, he was associated for a short time with the Electrical Development Company at Niagara Falls.

Mr. Kitchen was a member of the Church of the Epiphany; Delta Lodge, AF and AM; the Association of Professional Engineers of Ontario; the Electric Club of Toronto and the American Institute of Electrical Engineers. He is survived by his widow, the former Lillian Elizabeth Akins, a daughter, a son and four grandchildren.

APPROVE NEW LIGHTS AT BURLINGTON BEACH

Burlington Beach Commission has been authorized to install 12 new street-lighting units and accompanying distribution facilities, at an estimated cost of approximately $900.

Long Record of Public Service

SAMUEL John Babe can truthfully be called a public-spirited citizen. For the past 17 years he has served on the Oshawa Public Utilities Commission, of which he was Chairman for nine years; from 1912 to 1920 he was Trustee on the Board of Education and was Chairman for one year; in 1932 he was an Alderman; from 1932 to 1937 he served on the Oshawa Welfare Board, and in 1948 and '49 he was Chairman of the Old Age Pension and Mothers' Allowance Board. He is also Vice-Chairman of the Eastern Ontario Municipal Electric Association.

Born and educated in Dufferin County, he is now in the insurance business. Mr. Babe is a life member of Lebanon Lodge, AF and AM, and Pentalpha Chapter, R.A.M. He is also a member of Corinthian Lodge I.O.O.F. No. 61.

Mr. Babe is married and lost hi only son in 1943, but he is very proud of his two grandchildren.

BURIED TREASURE

(Continued from page 11)

miles distant on the Nipigon River. Through the bringing into service of its Pine Portage development last June with a present capacity of 80,000 horsepower and provision in construction for doubling generating installations, the Commission has placed itself in a greatly improved position to meet the rapidly increasing power requirements of Steep Rock and other important industries in the Rainy River district. The total power pool assembled at Lakehead is now approximately 318,000 horsepower, and the available supply for Northwestern Ontario is augmented by the Ear Falls Generating Station on the English River, which has a capacity of 25,000 horsepower and which will be tied in with the new transmission line now under construction from Moose Lake to Dryden.

New 30,000 Kva Transformer

When we dropped in at the Hydro construction camp at Moose Lake we found that the Commission's new 30,000-kva transformer station was nearing completion. Just on the other side of the hill was the old power station of the Ontario and Minnesota Power Company. The diversion of the Seine River had cut it off from its water supply, but before Hydro acquired it about a year ago, it had already been converted into a condenser station for regulating voltages. Now, with additional installations, it is regulating the power loads coming to Steep Rock from Port Arthur.

Practically all the men employed at Steep Rock are skilled or semi-skilled workers. A cafeteria, much along the lines of those serving Hydro construction camps, seats 250 people at a sitting. The menu compares favorably with that provided by the Commission for its workers, and we think there can be no higher praise. There are twelve graduate engineers on the staff. Most of them take their meals at home, but they are not averse to dropping in now and then at the cafeteria or "cook-house," as they call it, for a succulent morsel. Sports have been organized at the company's Don Park colony at Atikokan, and there are recreation, hospital and church facilities close at hand.

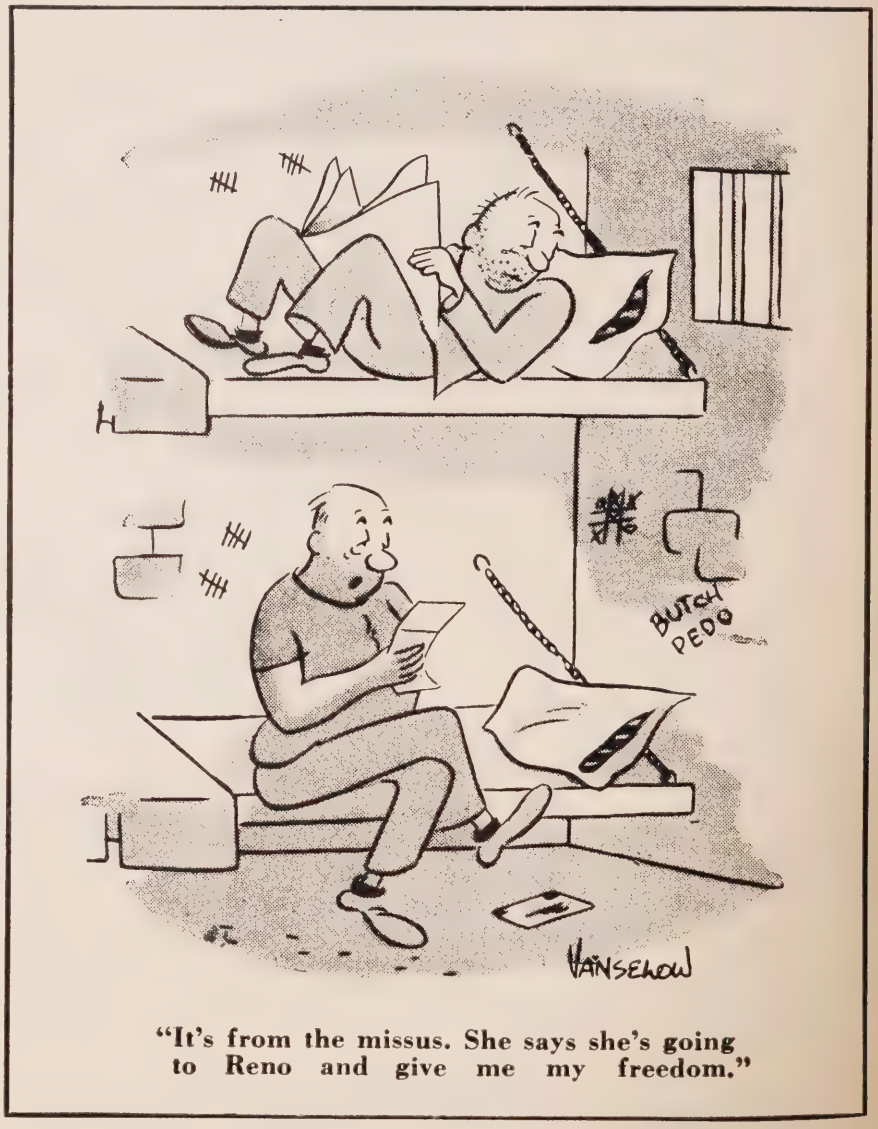
Picturesque Environment

One of the features of Steep Rock is the splendid road system developed by the company and extending in all directions over its properties. These local highways are kept in constant repair and we even noted a grader-and-scraper outfit working at night-time under Hydro lights. It was a pleasant experience to drive over these roads, with continually changing vistas of lake and river and forest opening up before one, and to be privileged to see for oneself the tremendous tasks carried out in the diversions. As in our own Hydro undertakings, the work of man in this place is calculated to enhance rather than to impair the beauties of nature. Dam and rock-cut, log-chute and canal all fit harmoniously into the environment. We admired the varied coloring of the rocky slopes, with the blue or sometimes white water flowing at their bases and we were told that in the springtime, when the colors are fresh and sparkling, they are even more attractive.

The iron ore mined at Steep Rock is said to be of a particularly high grade. It is crushed and screened to a size of 8 inches and then shipped by rail to Port Arthur. There it is loaded on ore boats for the lower lake ports. The largest of these ore-carrying vessels is of 16,800 tons burden, and is therefore, considerably bigger than the average run of ocean-going freighters.

As we left Steep Rock we were impressed by the realization that here was another great industry serviced by Hydro power and contributing in increasing measure to the maintenance of employment and the high level of prosperity which has been reached in this province. Steep Rock, too, we felt, in a broader sense, was advantageously situated geographically to serve in its particular way the western democracies and the mutual and expanding economic interests of the North American continent.

Ontario Hydro has approved the relocation of two miles of rural wood pole line in Norfolk County, six miles west of Port Rowan. This work, necessitated by road widening between Houghton and South Walsingham Townships, will involve an estimated expenditure of $2,700, with 50 percent of the labor costs being met by the County of Norfolk.



"It's from the missus. She says she's going to Reno and give me my freedom."

—Reprinted from Cosmopolitan

HYDRO HOME FORUM



by
Edithemma Muir
Home Economist



There'll be no confusion or waste of time when retrieving your luggage at an airport or depot if you mark both ends of each bag. Use white or colored cloth tape, or luminous paint and make strips or an initial big enough to be unmistakably identified from a considerable distance.

★

It's a good idea to keep a container of table salt in your desk as the salt can be used to remove ink stains providing it is applied immediately. Then apply cleaning fluid as soon as possible after the first treatment.

★

You get more "pop" from popcorn if you pour the kernels into a glass jar, cap tightly and "pop" the jar into the refrigerator for at least an hour before popping.

★

Make your jewellery sparkle for the festive season. A dip in lukewarm soapsuds is good for glass beads, especially the white ones. Rhinestones sparkle after shaking them in water to which baking soda has been added.

★

With the leftover peel, candied cherries and nuts, make a tasty fruit bread. Look up a recipe such as Stollen, Coffee Ring or Swedish Bread, and purchase quick-acting yeast.

★

You might have to buy more dates and pecans and make double this recipe for Pecan Roll. It's rich but wonderful: Chop 2 cups pecans and 2 packages dates (or 1 lb.); crush 12 Graham crackers; melt 14 marshmallows and ¼ cup milk over hot water. Mix all the ingredients on wax paper and form into a long roll with your hands. Chill in the electric refrigerator. To serve, slice in ¼-inch slices, and you may top with a spoonful of whipped cream.

★

Rocks! Their name belies them if they are made as they should be — a moist, uneven-shaped, fruit drop cookie. Not enough creaming action or an oven temperature that is too high will cause these petit mountains to flatten out like a flat rock. Bake in electric oven at 325°.

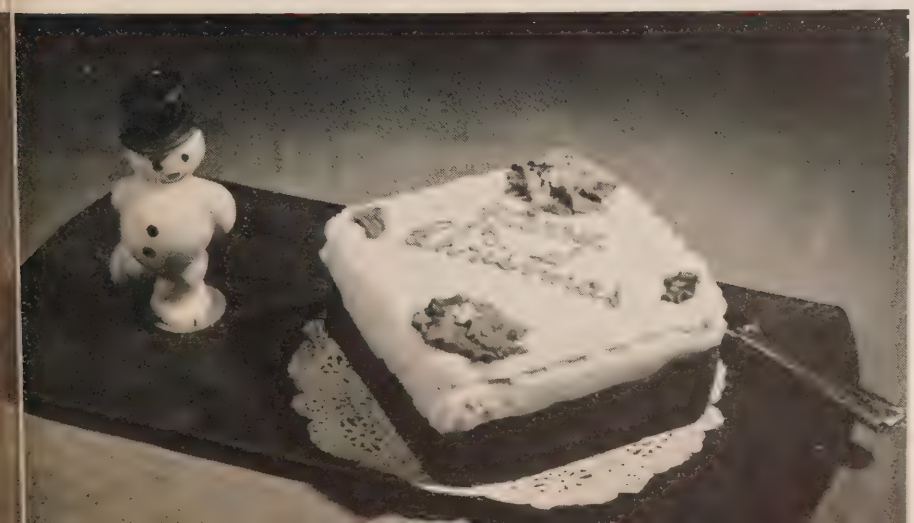
★

When lemons have been kept for some time and become too hard to permit squeezing out the juice, soak them in a pan of cold water overnight. The water will soften the lemons sufficiently to allow squeezing them without difficulty.

★

A candle stub forms a good stopper for a glue bottle. It can be easily removed as wax will not adhere to the glue as does the cork.

★



If you are sending a cutting of your favorite foliage plant in the mail, line the box with aluminum foil. Then, place a Malaga grape on the end of each stem and there'll be sufficient moisture to keep them in good condition.

★

Cream that is to be whipped before the meal will stand up better if you sprinkle a teaspoon of gelatin into it before the cream is beaten. Then keep cold in the electric refrigerator until serving time.

★

You do not like to feel dull—neither does any knife. Dull and ineffective knives waste time and cause annoyance. They may waste food.

★

Take Care for Longer Wear:

Sharpen a knife frequently with 2 or 3 strokes on the steel.

Use each knife for the purpose it was designed.

Never allow a knife blade to be heated in a flame.

Clean a knife immediately after use.

Avoid soaking handles in hot water and prevent chipping, cracking or discoloring.

Store knives on wall racks or in divided drawers so that the edges will not become blunted from chafing.

★

To prevent waste of electricity you may revise your methods of placing small appliances. Place the toaster, the percolator or the element for the vacuum coffee maker on the table where it is convenient to plug-in and disconnect . . . This saves steps and also wear and tear on the appliance.

★

Only saddle soap will do for conditioning leather covers on furniture. Apply saddle soap with a warm wet [illegible] dry thoroughly to keep leather upholstery soft. Do not use furniture polish or varnish.

★

It's wonderful to dry clothes outdoors but it's a tragedy if clothes freeze on a windy day — they may crack or tear.

Photo-news



Still Saying "Thank You"

PEOPLE in Winnipeg are still saying a heartfelt "thank you" to members of the Ontario Hydro Club for the $15,000 contribution to the Flood Relief Fund. Many expressions of appreciation have been received following the recent visit of John Dibblee, the Commission's Manager of Personnel; Harold Kennedy, the Hydro Club's Vice-President, and W. V. Morris, Secretary-Treasurer of the Employees Association, to Winnipeg on October 17, when Mr. Dibblee, on behalf of the employees, presented a cheque for the balance of the $15,000. An accompanying photograph shows Mr. Dibblee (left) in the act of making the presentation to Cecil Lamont, Honorary National Organizer of the Manitoba Flood Relief Fund. Mr. Kennedy is shown extreme left and Mr. Morris extreme right. The other two photographs, taken by Harold White Studio, Winnipeg, are graphic and grim reminders of the devastation wrought by the flood.







York Township Lineman Receives Dow Award

FOR an outstanding feat of heroism which involved saving a fellow worker's life at the risk of his own, Roy E. Archer, York Township Hydro lineman, was recently presented with the Dow Award. In honor of the occasion, the management and staff of the local Hydro gathered in their new garage building for a social evening to witness the presentation and pay tribute to Mr. Archer for his bravery. Introduced by General Manager H. R. McClymont, Chairman Walter Saunders of York Township Hydro presented the award on behalf of the Dow Co. of Canada. Lauding Mr. Archer for his bravery, Mr. Saunders said that he had acted "in the spirit of Hydro" and had earned the deep admiration of his associates. Mr. Archer is receiving the award from Chairman Saunders (right) watched by Mr. McClymont. (York)

Photo-news

Ringing In The Old

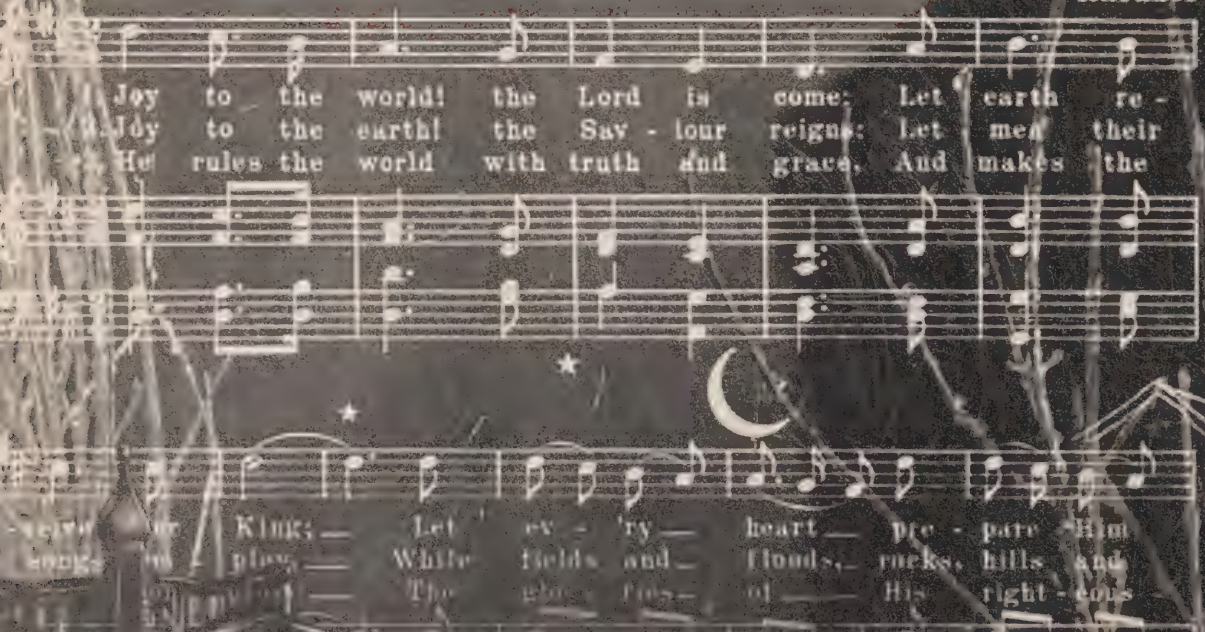
"NEW old lamp standards" is perhaps a departure from the usual in the grammatical sense, but the ingenuity of Hydro Manager W. B. Ford and the staff of Blenheim P.U.C. has helped to make a fact out of this statement. The local commission recently decided that a number of old fixtures, left over after Blenheim street lighting was improved several years ago, could be put back in service. Left to gather dust, the original top sections were rescued from obscurity when lighting improvements were recently carried out on McGregor Street. Gordon Moody is seen here installing one of the adapted 34-year-old "new" standards.



★

JOY TO THE WORLD

Haendel





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